INDIA RUBBER WORLD
FOUNDED 1889
CAOUTCHOUC
GUTTA-PERCHA
Reg. U.S. Pat. Off.
Reg. United Kingdom.

Published on the 1st of each month by

THE INDIA RUBBER PUBLISHING CO.

No. 25 West 45th Street, New York

Telephone—Bryant 2576

CABLE ADDRESS: IRWORLD, NEW YORK

Member of the National Publishers' Association

HENRY C. PEARSON, F.R.G.S., Editor

Vol. 71 February 1, 1925 No. 5

SUBSCRIPTION: $3.00 per year, $1.75 for six months, postpaid, for the United States and dependencies and Mexico. To the Dominion of Canada and all other countries, $3.50 (or equivalent funds) per year, postpaid.

ADVERTISING: Rates will be made on application.

REMITTANCES: Should always be made by bank draft, Post Office or Express Money Order on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Postal Order, payable as above.

Copyright, 1925, by The India Rubber Publishing Co.

Table of Contents .....Text Page 330
Advertisers' Index .....Advertising Page 108
Classified Advertisements....Advertising Pages 72-78
Buyers' Directory.....Advertising Pages 80-106
Our Publicity Page.....Advertising Page 68

The Rubber Planting Situation

THE enhanced price of rubber is attributed to various causes, such as restriction, speculative manipulation, increased demand, decreased planting, and reduction of stored stocks. Undoubtedly many of these causes have played a part since last August in advancing the price, but one cause which has been given scant attention, yet which may be fairly justified as a factor in price increase, has been the rising cost of producing rubber. For instance, the 1922 reports of the foremost planting companies in British Malaya showed an average all-in cost per pound of 7.82*d*; but representative companies in their 1924 reports show that all-in costs average 9.77*d*, as compared with 8.94 for 1923. True, the latter got more for their product in 1924 than in 1923, but it averaged only 1*s* 2.09*d*, as compared with 1*s* 1.89*d* in 1923,—the .20*d* gain being a rather meager margin as compared with the .83*d* increase in all-in cost.

There is no valid reason for believing that the cost of raising rubber and delivering to buyers will be less than it is today; in fact, the chances are that production costs may advance somewhat more. Labor is getting neither cheaper nor more abundant, supplies show little likelihood of price abatement, and administration charges will probably be more to insure good management. Rubber is dearer, but so is wheat despite a big crop. With less reason than for rubber, coffee has been aviating of late, but purchasers seem to be resigned to their lot.

Comparisons may be odious yet it seems but fair to contrast with rubber the price antics of its commercial cousin—cotton. Not long ago there rang through the land the plaintive plea, "Buy a Bale." Cotton was in distress. Luckily, favoring circumstances supervened and a disaster to the planting industry was happily averted. From out of the 10-cent depths cotton has since mounted to two and a half times its bottom price, just as rubber has advanced in similar proportion from the starvation 14-cent price. In each case the near-debacle had been ascribed to over-planting. Although cotton steadily mounted, there was no hysteria among buyers. Somehow they accommodated themselves to the change.

So, too, will it be with rubber, which is no more immune than any other commodity from the laws and influences that affect trade. True, it may vex some buyers to pay the advanced prices, but perhaps they will discover that the prices are not so extravagant after all; and the unwilling converts will reluctantly pay the toll and solace themselves by passing the extra charge along to the ultimate consumer.

The advance in rubber will doubtless interest Mexican land owners, now that President Calles has turned his back on the Agrarian policy and the millions of acres illegally seized or unworked are to be returned to their owners. Thus many great rubber plantations may again become valuable. It is probable that in certain areas there are mature Castilloas that it will pay to tap. With Hevea seed easily obtainable, the Pará tree will doubtless be added and Mexico may again become a rubber producing country. Rubio, Tehuantepec, La Hunta, Dos Rios, and scores of other plantation names once widely known may again come into prominence. Nor is it rubber or other tropical products only that begin to look inviting. Many of the great plantation areas are in the oil belt so that there may be riches both above and below the ground.

Looking further afield, the pronouncement of Alexander H. Mozzall, sometime of the Rubber Commission, upon planting in the Philippines is of great interest. Incidentally, his conclusions are those of that very capable and useful body, the Philippine Bureau of Forestry. Mr. Muzzall starts off with the premise that the Hevea is forest rather than a horticultural problem. In other words, he would abandon artificial in favor of natural methods. He questions the wisdom of jungle clearing, advocating open land or secondary jungle growth. He would plant 300 trees to the acre, with foodstuffs between. Thinning should be done only to get rid of the poor trees. No weeding nor cultivating. This plan, so he claims, would have the advantage of low capital investment, quicker returns, due to larger yields, and lower costs of upkeep. His conclusions are drawn largely from a study of the Chinese and native Hevea plantations in the British and Dutch colonies of the Far East. That those little plantations are successful is proved by the fact that about one-third of the rubber from those colonies is the product of the native and not European plantations. It is a patent fact that the native plantations can make a fine profit while the European is losing money. This being the case, are they not sure to increase until they put the Europeans out of business, unless, indeed, less costly methods are followed by the latter.

Increase in Exports Certain

PAUL M. WARBURG, chairman of the International Acceptance Bank of New York, after a searching investigation of European financial and economic conditions, returned with a message that will cheer the whole rubber trade. He said in part:

"The outstanding effect of the acceptance of the Dawes report is that the reparations question has now been taken out of the grip of partisan politicians and placed in the hands of non-partisan judicial experts acting from a purely economic point of view. The cancer that threatened Europe's very existence has thus been removed.

"I believe that there is sufficient evidence to warrant the hope that in the striking victory of this principle of arbitration we see only the auspicious beginning of its triumphal march through the Old and the New World."

Regarding the German Loan:

"The loan requires an annual service for interest and amortization of no more than about $20,000,000, which is a mere fraction of the fixed charges of our large industrial or railroad corporations. If we consider that this annuity is secured by the first lien on 65,000,000 people of one of the most industrious countries, it is difficult to conceive of any better security, provided, of course, that these people are certain to be left undisturbed in their work.

"Moreover, I believe that German competition will not be as keen and as deadly as many seem to anticipate. Germany is impoverished to a degree that will only be realized fully when the gold mark balance sheets will have been completed and give a true picture of her shrinkages. She has wonderful plants, but —as in almost every other industrial country—their productive capacities are too large for the reduced purchasing power of the world. To my mind, it will take Germany quite a number of years to regain her pre-war scope and importance as a competitor in world markets."

OUR FINICKY FRIENDS, THE ETYMOLOGISTS, WHO STRESS the importance of using words only in strict conformity with their derivation, grieve at the widespread use in the rubber trade of the expression "cold vulcanizing." The term vulcanizing they readily approve as defining the application of heat in a rubber-treating process, as well as the use of the name of the Roman fire god Vulcanus as being peculiarly expressive. But as quite incongruous and self-contradictory do they regard the term "cold vulcanizing." They can not see any justification for it at all. To them it is plainly a misnomer. Captious they may seem, but it can hardly be denied that their point is well taken. Rubber terminology should be as correct as that of any art or science. Doubtless the more exact expression would be "cold curing." Yet lots of old-timers in the trade will, in the mood of the Italian astronomer forced to recant what he said about the earth revolving about the sun, say, "Well, it may be cold curing all right, but it is vulcanizing just the same."

AMONG NO SECTION OF THE AMERICAN PEOPLE IS THERE a more hearty, spontaneous, and even vociferous indorsement of the doctrine that all rubber should be raised in America than among the multitudes that daily gather to see "Babe" Ruth and others sending high in air the 3-inch spheres in which rubber is a prime essential. At the same time many millions who can not get to a game attend it in spirit and, reading the box-score extras, exult in a quieter way over the "raising of rubber."

Yet the half-inch cork core of the baseball comes from Spain, the rubber vulcanized about it comes from the British Malay States, the inner winding of wool yarn from Australia, and the final covering is of horsehide commonly from Argentina. Truly the game is very much American, but its chief instrument is decidedly international in construction, and affords but another proof of our common world interdependence.

WISDOM IS THE PRINCIPAL THING; THEREFORE GET wisdom: and with all thy getting get understanding.—Proverbs, 4:7.

The Installation of Rubber Flooring

Cost of Manufacture—Installation Costs—Details of Laying Floors—Installing Rubber Tile on Wood

By Elmer Swanson

RUBBER flooring embraces the largest potential field in the rubber industry with the exception of rubber tires, a few of its many uses being indicated in the following list:

Automobile Showrooms
Banks
Bank Vaults
Barber Shops
Basket Ball Floors
Bath Rooms
Billiard Rooms
Business Offices
Churches
Clothing Stores
Delicatessen Stores
Doctors' and Dentists' Offices
Drug Stores
Elevators
Ferry Boats
Hospitals
Hotel Lobbies
Ice Cream Parlors
Jewelry Stores
Lodge Rooms
Municipal Buildings
Medical Laboratories
Photograph Studios
Restaurants
Railroad Stations
Shoe Stores
Stairs
Steamships
Sun Porches
Table Tops
Theaters
Train Coaches
Undertakers' Parlors
Vestibules in Homes

Manufacturing Costs

Manufacturers of rubber flooring will be likely to encounter difficulties if the cost of manufacturing, including reasonable profit, exceeds 50 cents per square foot, figuring on ordinary floors with inexpensive dyes. Special colors, patterns and manufacturing methods naturally cost more. By allowing five cents per square foot for cutting and five cents for freight and trucking, making 60 cents per square foot, plus an average of 12 cents per foot for installing and ten cents per square foot for selling and overhead expense, the cost should total about 95 cents per square foot, including a few cents profit. To this must be added, for out-of-town work, the railroad fare to and from the location, and board and room for each man, which ranges from $4 to $5 per day.

Such floor patterns as the crazy quilt, herringbone, triple joint, or other special designs, should carry an extra charge, not only for laying, but also for cutting, and only skilled mechanics should be allowed to install them, as an error may be very costly to the concern.

The cost of installing cove base, if inside and outside corners are used, averages ten to fifteen cents per foot on ordinary work, always nailing the top of the base with fine headless brads about two inches apart, driving them in hard to insure covering up, and cementing the back of the base. Paint must be removed from the floor, as the rubber cement will not adhere to painted concrete floors.

Cost of Installing Rubber Flooring

The cost of installing rubber flooring is largely a matter of location and area. For instance, large tile, say 18 by 18 inches, can be laid down in large spaces much more quickly than 4 by 4-inch tile in kitchens and elevators. If laid on concrete, the cost is less than on wood, as the material for preparation of the wood backing is not necessary, which effects a saving of seven cents per square foot. On wood floors in kitchens of about 100 square feet, the cost of installing 6-inch square tile averages nine to twelve cents per square foot. On concrete, installing the same tile averages seven to ten cents per square foot. In large spaces of 500 square feet or more, on wood backing, the cost averages, with 18 by 18-inch tile, about seven to nine cents per square foot, and on concrete, about four to seven cents per square foot. These costs do not include trucking, overhead expenses, cement, selling or cutting the material; they include merely the mechanical installation of the specified sizes of rubber tiling on concrete or wood floors.

Courtesy, American Tile & Rubber Co.

(A) Cementing Felt to Wood Floor. (B) Laying Out and Filling In Panels. (C) Finished Floor in the Greek Orthodox Church, Newark, New Jersey

What Constitutes a Day's Work

Men experienced in the art of rubber floor laying can install 100 square feet of 6 by 6-inch tile on wood per eight hours, or 125 square feet on concrete; they can lay 85 square feet of 4-inch square tile on wood, or 100 square feet on concrete. Using large tile, 12 by 12 inches or over, a mechanic can install on wood 150 to 175 square feet per eight hours, and on concrete 200 to 250 square feet. This applies to large spaces with no columns requiring special cutting.

Piece Work and Superintendence

Piece work laying has been tried by nearly every concern in the business, with poor results. Mechanics as a rule slight the work on this basis for their own profit, and repairs have always been the result, causing dissatisfaction to customers and harming the reputation of rubber floors.

A superintendent of rubber floor laying should always be a practical man with some technical training, who understands what a man can do for a day's work, and also what is needed for building up poor under-floors. Usually architects understand too little about rubber floors, their experience in this line not yet being very extensive. For this reason they do not understand the handicap of dampness in concrete until it happens on their own job. If architects and rubber concerns would work together for the benefit of rubber floors, a great future for them would be in sight.

So many imitation rubber floors are on the market that unless one is actually in the rubber floor business he has a hard time keeping up with the pace set by new inventions. Cork composition rubber, dreadnought, etc., are all ¼-inch battleship linoleum, or as close to it as two peas, with the burlap ripped off and cut up in squares. A good test is to bend a square so that opposite corners touch; if it does not break it is not linoleum.

Laying Rubber Tile on Wood

In the installation of rubber tile on wood, when only felt is used, the felt is cemented to the wood and rolled to insure thorough cementing of the felt to the floor, after which the rubber tile is cemented to the felt. This type of installation is the cheapest.

The felt is first laid to fit in the room, butting the joints together, one pound of felt being used to the square yard. The ends are rolled back to the center, and as the cement is applied (not too thin, as plenty of cement helps to take up unevenness in the underfloor and fills up crevices) the felt is rolled on to the fresh cement, allowing no skin to form from evaporation. The felt is then rolled down firmly.

The number of tiles required is then figured across the room for the border, which should average about six inches. In larger spaces with, say, 12-inch square tile, a larger border would be required. The border is then cut in on all sides and paneled out into 8-foot panels and left to dry. The panels are next filled in with tiles and rolled.

When imperfect tiles are used this method is not very satisfactory in a large space, as the tiles may be under-sized and leave open joints. In this case find the center line from all sides, square the lines up and work the tiles in by pushing them against three sides, leaving the border to be cut last. The start from the center must be figured so that the border will correspond with the drawing, otherwise the work may end with a half tile instead of a full tile. The border should be fitted and cemented when there are six more tiles to be installed so that a little pressure can be used, after which the entire floor is rolled down.

If round designs are put in they can be laid out with a large compass, or if a larger radius is needed a stick with a nail at each end will prove satisfactory. As a general rule designs are laid out by the factory draftsmen, cut by expert cutters and sent to the job ready for laying.

The floor shown by the accompanying illustrations, however, covering 4,200 square feet, including twenty stair treads and design, was cut on the job and installed for 4½ cents per square foot under the supervision of the writer.

Continuous Production of Inner Tubes By Tubing Machine[1]

Calender or Ply Method of Manufacture—Continuous Production of Seamless Inner Tubes—Advantages of the Tubed Product—Type of Machine Required

DEVELOPMENT of the pneumatic tire industry to its present annual output capacity of 60,000,000 tires, more or less, has been attained through intensive study involving the internal and external construction of the tire and the even greater task of developing the machinery and equipment necessary for volume production at minimum cost. Although inner tubes are made in quantities exceeding those of tires their relatively small cost and simple construction, compared with tires, offer correspondingly less inducement for improvement in process and cost reduction. The time has arrived, however, when manufacturers are turning attention to the possibilities for profit available through cost reduction and process improvement in the manufacture of inner tubes by continous production methods.

Calendered Tube Method

The long accepted method of inner tube construction is to roll several plies of calendered stock around a mandrel, and cross-wrap it for curing. This method is slow, costly and wasteful. In effect it deprives the manufacturer of receiving a fair profit at current prices. Practically every step of the usual process of tube making from calendered sheets involves loss of machine time, labor, and waste of material in process or defective product. The process, in outline, is well known and varies but little in the practice of different manufacturers. The rubber, after mixing, is allowed time to cool in the batch; stored for aging; removed from store; warmed on mill, calendered, at about half capacity of the machine, and delivered to the making department.

In the making department it is stored again for conditioning before being rolled up on the mandrels. At this point it is frequently necessary to scrap back to the calendering department a large percentage of the stock for recalendering, because of faulty gage or too firm adhesion of the stock to the liner which prevents its removal without stretching.

Spiral wrapping the tube for vulcanization is a process involving a costly waste of wrapping material besides a large labor and floor space requirement. After completion the results are not always satisfactory, due to the additional thickness of the tube at the overlap of the ply. This overlap always remains at the mean diameter of a straight mandrel tube when inflated, and dislocates the valve. In making circular inner tubes for the large cross section sizes of the balloon tire the tube is plied on a straight mandrel, removed, dusted, and placed on a circular mandrel. It is then wrapped and unwrapped on special machines

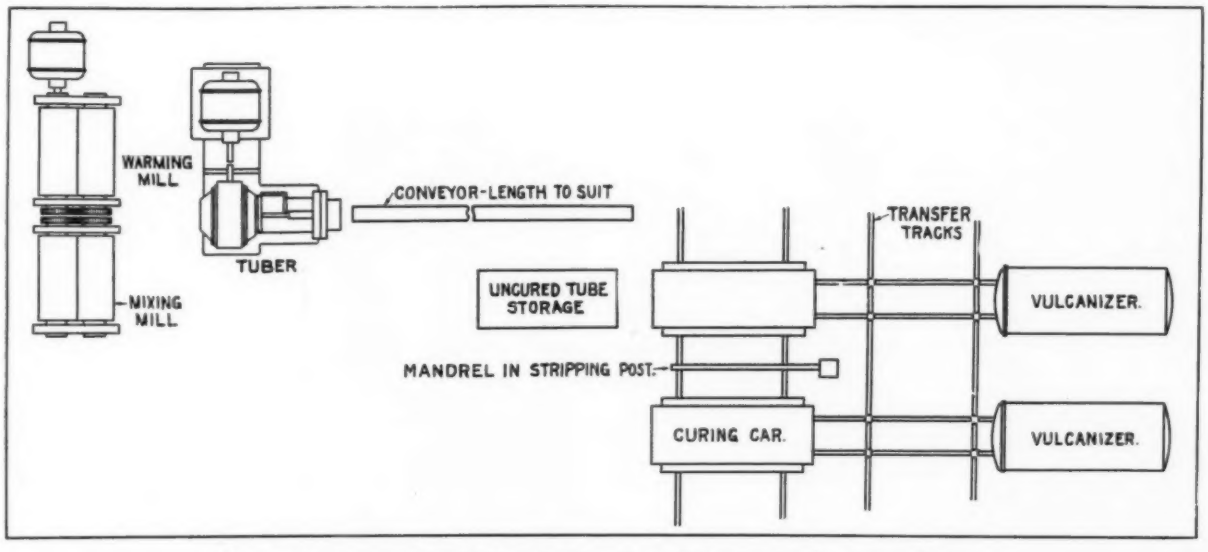
[1] Data and illustration from John Royle & Sons, Paterson, New Jersey.

and the waste of wrapping tape is even greater than with straight mandrel wrapping.

Tubing Machine Process

An improved method of making inner tubes, and one less expensive in several important particulars than the calendered method, is the continuous production by the tubing machine. which is now receiving favorable attention from manufacturers. This method offers savings of direct labor, conserves floor space, reduces permanent equipment investment and offers unusual possibilities of cost reduction.

An ideal floor plan arrangement of the apparatus from mixing mill to vulcanizer required for a small production unit by this method is shown in the picture. The tubing machine is placed convenient to the mixing mill, allowing the thoroughly mixed rubber to be passed immediately and without undue handling to the warming mill from which it is cut off and fed directly into the tubing machine. The seamless tube as it issues from the tubing head fixtures is received by an automatic conveyor belt and carried to the point for storing. Here the tube is cut to measured lengths and stored preparatory to placing on mandrels inserted into the stripping post.



Layout of Department for Making Seamless Inner Tubes by the Continuous Process

The uncured tube is placed on the curing mandrel by slightly inflating the tube with air and passing it on the mandrel. Then the ends of the poled tube are taped, and it is loaded on the car for vulcanizing. After vulcanization the mandrel is again placed in the post, the cured tube is removed by reversing it in the usual way and another uncured tube from storage is immediately placed on the mandrel as described and loaded onto the second car, as shown. A system of transfer trucks and tracks permits placing the cars to facilitate the work.

Advantages of Tubed Inner Tubes

The tubing machine product being seamless and of uniform wall thickness requires no wrapping on the straight or circular mandrels, and causes no dislocation of the valve under the pressure of inflation. Actual tests show no difference in tensile strength in the same material whether tubed on tubing machines or calendered and laminated. The tubing machine product is in all respects as strong and durable as that of the more complicated calender process.

From the standpoint of capacity and production cost the tubed tube excels the calendered tube because it is less subject to factory blemishes, such as are caused by adherence of the rubber to the mandrel and air marks or moisture trapped between the rubber surface and the mandrel. The inside of the tubed tube being thoroughly dusted with soapstone as it leaves the machine allows all air to escape and leaves the tube smooth inside.

The saving in materials by the tubing process is an item of considerable importance. The tolerance in weights allowed the tubing machine operator is well within that allowed the calender operator.

The machine that most effectively establishes the superiority of the tubing machine process is a compact worm-geared unit which forces the rubber through smoothly at constant gage and in uniform quantity. The rubber is taken into this machine rapidly, its mixing is continued by the action of the screw that brings it to and forces it through the special head and fixtures. At this point, just before the material is delivered from the machine, the tube is formed under great pressure as it passes through a die and core of special shape and length. The operating efficiency is high, due to a complete equipment of ball bearings for the worm and gear and the thrust bearing itself. The machine output of tubes for 3½ by 30-inch tires is 7 tubes per minute.

The successful application of this method of inner tube making is solely dependent on the recent advance in tubing machine development, which has involved many points in design construction and power application.

BALLOON TIRES PREDOMINATE ON NEW CARS

A survey of the tire equipment used by 52 American manufacturers of automobiles shows, according to *The Scientific American*, that 24 of these manufacturers prefer balloon casings exclusively as original equipment, while four use both balloon and standard types, one company outfitting its cars with either balloons or semi-balloons. Twenty-three manufacturers specify standard tires.

Of the 16 sizes of balloon casings represented, the most popular are 31 by 5.25 inches; next come 32 by 6.20; then 32 by 5.77, followed by the 33 by 6-inch type. Of the balloon tires mentioned, the largest measured 34 by 7.30 inches and the smallest 20 by 6 inches.

The Rubber Association of America

Silver Anniversary Dinner

OVER seven hundred members and guests attended the twenty-fifth annual dinner, the Silver Anniversary of The Rubber Association of America, Inc., held at Hotel Commodore, New York, N. Y., on the evening of January 5, 1925. An excellent menu and good music were much enjoyed, together with songs by Reinald Werrenrath, accompanied on the piano by Herbert Carrick, and followed by a program of two speakers. Amplifiers located at various points made the exercises audible in every part of the hall.

A novelty souvenir this year which created much amusement was a brown derby prize uncrossed word puzzle of twenty-five words familiar to rubber men, with witty definitions. Each diner was supplied with a pencil and later a card bearing the complete solution of the puzzle.

At the President's Table

Seated at the president's table were the following prominent men representing the rubber industries of the United States and Canada, and the guests of the association: C. T. Wilson, Charles T. Wilson Co., Inc.; Reinald Werrenrath, the noted singer; G. B. Dryden, Dryden Rubber Co.; G. E. Hall, Boston Woven Hose & Rubber Co.; W. F. Pfeiffer, Miller Rubber Co.; W. H. Miner, president of the Rubber Association of Canada; G. B. Hodgman, Hodgman Rubber Co.; F. C. Hood, Hood Rubber Co.; Windsor T. White, Automobile Chamber of Commerce; F. A. Seiberling, Seiberling Rubber Co.; C. B. Seger, United States Rubber Co.; R. C. Benchley, dramatic critic of "Life"; W. O. Rutherford, president of the Rubber Association of America; Francis H. Sisson, vice-president of the Guaranty Trust Co.; G. M. Stadelman, Goodyear Tire & Rubber Co.; J. C. Weston, Ajax Rubber Co.; G. B. Griffin, Westinghouse Electric & Manufacturing Co.; E. H. Broadwell, Fisk Rubber Co.; H. M. Crane, Society of Automotive Engineers; A. L. Scheuer, Kelly-Springfield Tire Co.; W. E. Bruyn, L. Littlejohn & Co.; C. E. Stokes, Home Rubber Co.; J. S. Lowman, Philadelphia Rubber Works Co.; M. F. Clark, General Counsel of the Rubber Association.

Robert C. Benchley

President Rutherford's Address

The postprandial exercises were opened by the president, W. O. Rutherford, of The B. F. Goodrich Co., acting as toastmaster, who first requested all to arise out of respect to the President of the United States and sing "The Star Spangled Banner."

Following a few words of hearty welcome to members and guests, Mr. Rutherford expressed his gratitude to those in attendance for their loyal support of the association and himself, thanked manager Viles for efficient cooperation, and acknowledged the honor conferred upon him by his election to the presidency for the ensuing year.

Alluding to the Silver Jubilee of the association, founded in 1900 as the New England Rubber Club, he cited as measures of the growth of the rubber industry during the past twenty-five years the facts that the rubber consumption of the United States has increased from 25,000 to 335,000 tons, an increase of 1,200 per cent; that 70 per cent of this rubber is used in the automobile industry; that the annual turnover is over a billion dollars; and that the industry today is sound and on a firm basis.

Business Outlook Encouraging

During the past four years, he said, the rubber industry suffered its only real depression along with business generally, the year 1920 perhaps being the lowest ebb. General conditions now, however, are most favorable, due to an improved political as well as economic situation. His opinion of the present position is summarized in two recent statements to the press, which he read as follows:

© *Underwood & Underwood*

Francis H. Sisson

My observations are that the underlying business conditions of the country in industry and commerce are sound and outlook most encouraging. Dawes plan, accepted by leading countries of Europe, will provide much needed outlet to foreign trade. Agricultural situation vastly improved. For the first time in several years the price of farm products and that of manufactured goods are near common level. With specific reference to rubber industry, it is on a sounder and more healthful basis than at any time in past decade. The manufacturer, the merchant and the public are beneficiaries of scientific management and since the profits of the future will largely come from the elimination of waste we must continue unabated efforts to improve our methods of manufacture and distribution. Statistics show that the dollar will buy more in rubber than any other basic commodity. This is not necessarily a boast, but merely an indication that rubber products are being sold on too low a price level. A sensible word of caution to all industries and all individual enterprises is to avoid over-expansion.

The message that is uppermost in my mind concerns the proper returns on the capital invested in our industry. The real test of business management is the ability to earn sufficient profits to pay its obligations, which obviously must include dividends to common and preferred stocks and provide a reasonable sum for reserve.

When I make the challenging statement that the rubber industry is one of the most useful and essential in the welfare and progress of our country, it is in no sense a boast but merely a temperate statement of facts.

In the rubber industry we have suffered severely in the past, and we owe it to our stockholders and the public we serve to place our business on a healthy and profitable basis, and I recommend that we work individually and collectively to this end.

Ovation to W. H. Miner

W. H. Miner, president of the Miner Rubber Co., Ltd., and of the Rubber Association of Canada, was introduced by President Rutherford and received an ovation, but did not speak, as he had been promised that he would not be asked to do so.

Mr. Benchley's Address

Robert C. Benchley, dramatic critic of "Life," was the humorist of the evening. His burlesque of the remarks of a typical after-dinner speaker on business topics were so replete with witty and contradictory nonsense as to set all present into gales of laughter.

Mr. Sisson's Address

Francis H. Sisson, vice-president of the Guaranty Trust Co., the principal speaker of the evening, proved himself a humorist

worthy to follow Mr. Benchley, but his witty anecdotes invariably served to emphasize important points in the serious purpose of his remarks.

It had been some years, he said, since the rubber industry had enjoyed a jubilee, and he felt it was entitled to one for its achievement in sticking to the job and during the past few years bringing the industry past its boom, its deflation and inflation into something like economic sanity and solidity. Its mistakes, he assured his hearers, were common to business generally, and its recovery likewise, so that we now have a considerably more optimistic outlook than we have been able to enjoy for a long while.

Events Which Brought Better Business Trend

Three outstanding events of the year 1924, which have given a definite trend to our whole business future, he referred to as follows:

In the first place, there was the Dawes report, which was the beginning of economic recovery in Europe; for that is really what it implies, the buying power of Europe. In the next place, there was the adjustment of industrial and agricultural prices to something like evenness, which is absolutely essential in our whole economic scheme. And in the third place, conservative political victories, not only in the United States, but throughout Europe, which give a fair assurance of protection to property and a rational attitude toward business.

These three things all are important factors in the situation that we face, and the basis of prosperity which they lay down as results of the influences they have set in motion are also evident.

Those bases of prosperity, solid prosperity, not a boom, but legitimate business that I feel awaits us, might be cited in the first place as ample credit and capital, and low interest rates, with your banks in better positions to serve you than they have ever been before in their history; in the next place, a stability and balance of prices which is absolutely essential to economic order. In the next place, a high purchasing power of wages, higher than ever before in the history of the country; for although living costs have gone up about 72 per cent since before the war, costs have gone up over 100 per cent on the whole, and wages today carry a higher purchasing power than ever before in our history.

In the next place, ample and sufficient and efficient transportation. The splendid progress that our railroads have made in the way of readjusting their affairs is an open book to you all, but it is a very vital factor in the problem of distribution and merchandising with which you are concerned.

In the next place, our increasing foreign trade, exports climbing and the markets of the world opening up to us in a constantly increasing degree.

In the next place, the recovery in our great industries is an important part, and which in a sense marks the whole industrial situation. It is true not only of you but of the textile industry and the motor industry and the iron and steel industry and the leather industry and many more.

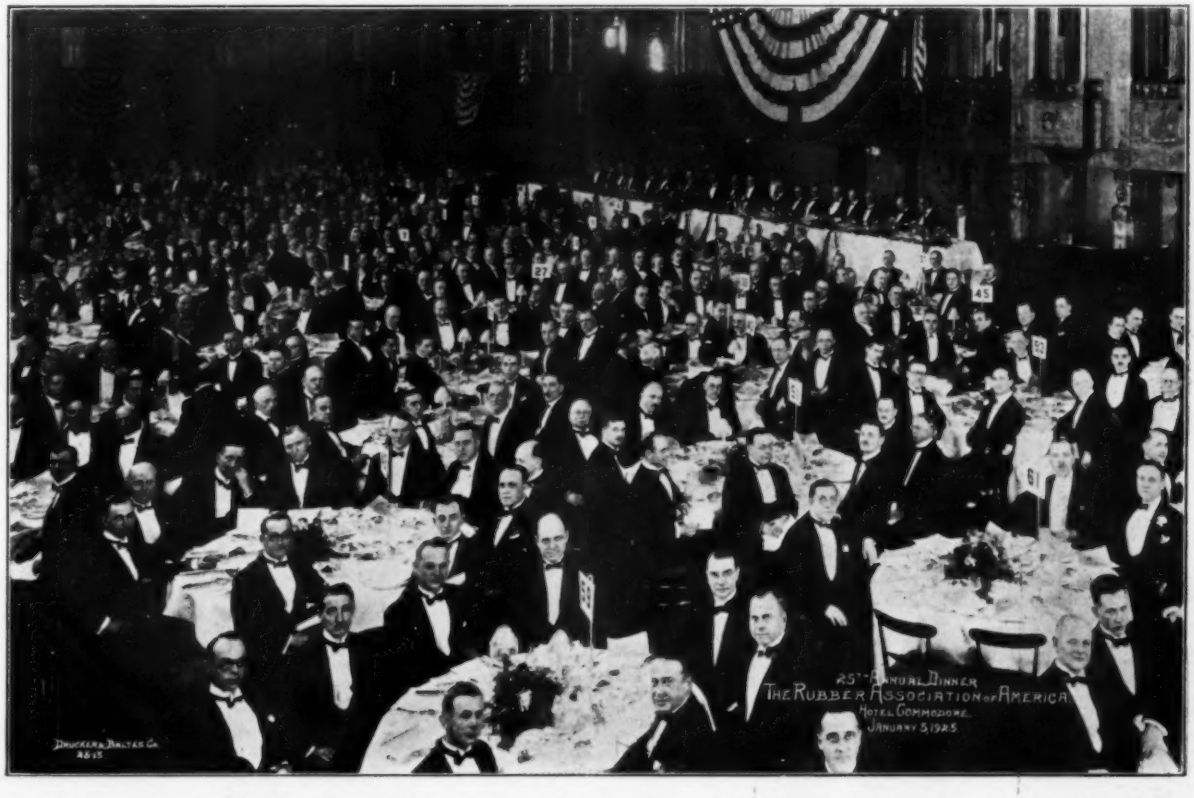
In the next place, an active demand for securities which makes it possible for us to market the obligations and the certificates of ownership of our great corporations and to permit them to expand along legitimate business lines.

In the next place, a tremendous increase in our savings bank deposits and in our life insurance policies, as evidence of the thrift of our people and of a determination not only to enjoy life with their increased earning power but also to conserve it, and that was never more evident than today.

And finally, there is the improved political outlook.

Cooperation Between Capital and Industry

Stressing the essential unity of interest in this country, and the need to clear away the prejudices which have so frequently torn business asunder, Mr. Sisson emphasized the importance of cooperation between capital and industry, which is becoming better understood. Capital, he explained, is merely the accumulation of personal and corporate thrift, and Wall Street simply the reservoir of the nation's capital and credit, gathered together for redistribution to its industries in productive industries. Its vital



Silver Anniversary Dinner of The Rubber Association of America, Inc., Held at the Hotel Commodore, New York, N. Y. January 5, 1925.

Officers and Directors of The Rubber Association, 1925

George B. Hodgman
Treasurer

H. S. Hotchkiss

G. B. Dryden

A. L. Viles
General Manager-Secretary

C. M. Stadelman
First Vice-President

W. O. Rutherford
President

Charles B. Seger
Second Vice-President

G. E. Hall

A. L. Scheuer

W. F. Pfeiffer

W. E. Bruyn

F. A. Seiberling

©*Underwood & Underwood*
J. C. Weston

C. C. Gates

E. H. Broadwell

Charles T. Wilson

Portrait of Charles E. Stokes, a director, not available.

necessity to the business interests of the country was never greater than now, he asserted, nor its desire to cooperate with these industries.

The Situation Foreshadows Better Day

There followed an intelligent statement of the vital necessity and the constructive accomplishments of private ownership of utilities and of the whole capitalistic system on which the prosperity of America and the entire world has been built and must be maintained. To this he added the following by way of conclusion.

As Secretary Mellon put it not long ago, to get back to sound sense and hard work and economy and intelligent stimulation of the important business facts with which we must deal remains the lesson of the hour. The economics of the arithmetic table and the morals of the Ten Commandments and the maxims of the good old copybook are the lessons we have to take home.

The situation today presents, it seems to me, a world outlook upon which we can very well be happy and upon which we can predicate our future; for the better employment of our labor, a greater degree of peace and happiness among our people, and a stimulated prosperity in our business activities generally, are the fruitage of that sort of philosophy and of that sort of practice which our President and those about him so well exemplify.

We need peace and stability and confidence, and they are being supplied by our own situation and by the world situation, and I believe they are foreshadowing a better day.

Annual Meeting of the Rubber Association

Budget for 1925—Crude Rubber Fee Reduced—Letter Ballots for Directors Authorized—Annual Convention Proposed—The Boston Exposition—Rubber Flooring Division Suggested—Election of Directors and Officers—President Rutherford's Address—General Manager's Report

Annual Meeting of the Rubber Association

THE annual meeting of the Rubber Association of America, Inc., convened at the Hotel Commodore, New York, N. Y., at 11:30 a. m. January 5, 1925, President W. O. Rutherford, presiding. Formalities, such as the reading of the call for the meeting, and of the minutes of the previous meeting, were dispensed with. The reports of the general manager and treasurer, having been printed and distributed, were not read, but unanimously accepted.

The Budget for 1925

G. M. Stadelman, chairman of the budget committee, presented a budget for 1925 totaling $152,645.36, as compared with $221,902.91 for 1924, which was accepted. Its items are $104,820.36 for administrative expense; $20,325 for divisional expense; $27,500 for special appropriations and contributions.

Membership Crude Rubber Fee Reduced

In view of the budget reduction and the treasury surplus of $175,147.73, the membership crude rubber fee for the year was reduced from three to two and three-quarter cents per hundred pounds of rubber imported, which will yield $25,000 to $30,000 more than the proposed expenditures if rubber imports equal the tonnage of 1924.

Mail Ballots Authorized

While balloting on the nominations for new directors by firm members was in progress, F. C. Hood spoke of the embarrassment of being able to elect only five of the ten good men nominated, and particularly of the embarrassment of the officers of the association under such circumstances in filling in the many proxies sent by firm members unable to attend the annual meeting. At his request P. W. Litchfield presented a suggestion that the ballots prepared by the nominating committee be sent to firm members and that such members unable to attend the annual meeting fill out the ballots and mail them. After some discussion, a resolution to authorize the use of mail ballots was unanimously carried, on motion of Mr. Litchfield.

Time and Place of Annual Meeting

Under new business, President Rutherford brought up the opinion often expressed that better results might be had if the annual meeting were held at another time and place than in connection with the annual dinner and during the Automobile Show. He mentioned the demand for resumption of the midsummer meeting or outing and the suggestion of some that the annual meeting and outing be held together. On motion of G. B. Hodgman, Section 1 of Article X of the by-laws was suspended for consideration of the subject, and on motion of F. A. Seiberling it was unanimously voted to leave the matter to the board of directors.

Proposed Rubber Exposition

Quincy Tucker brought up the subject of the proposed World's Rubber and Tropical Products Exposition to be held in Boston, Massachusetts, October 10 to 17, and at his request General Manager Viles read a letter from the Boston Chamber of Commerce inviting the cooperation of the Rubber Association of America. On motion of E. H. Broadwell the matter was referred to the board of directors for action.

Rubber Flooring Division Proposed

A letter from James Stedman was read by M. A. Turner outlining the growth of the rubber flooring industry and the desire of its members to form a separate section or division in which the problems involved could be considered. At President Rutherford's request, General Manager Viles explained that so many flooring manufacturers are also manufacturers of mechanical rubber goods that the Mechanical Goods Division was considering the advisability of forming a flooring committee, section or division. He also outlined the attention which rubber flooring is receiving from the association and the work of a special committee cooperating with the Bureau of Standards in a series of tests for the purpose of developing a walk-way surface code covering the various types of flooring used in public places.

Election of Directors

Following the balloting it was announced that E. H. Broadwell, F. A. Seiberling, G. M. Stadelman, J. C. Weston and C. C. Gates had been elected as the new directors. Adjournment was then taken, followed immediately by an organization meeting of the board of directors.

Election of Officers

At the luncheon session shortly afterward President Rutherford announced the election of the following officers for 1925 by the board of directors: President, W. O. Rutherford; first vice-president, George M. Stadelman; second vice-president, C. B. Seger; general manager, A. L. Viles; treasurer, G. B. Hodgman; assistant treasurer, E. M. Bogardus; assistant secretaries, A. D. Kunze and George Flint; executive committee members from the board of directors: J. C. Weston and W. E. Bruyn.

President Rutherford's Address

In a concise and able address President Rutherford then reviewed the major accomplishments of the rubber industry during 1924, its outlook for 1925, and made several specific recommendations important to its welfare. The general improvement in the

industry, he said, had been indicated by increased volume and profits. The major accomplishments of the past year, he believed, were economies in manufacturing and distribution; eliminating peaks and troughs of production; uniform employment of labor; better regulation of inventories; standardization and simplification. Alluding to the bright outlook for 1925, he discussed its fundamental hazards, especially the fluctuating prices of basic materials, such as crude rubber and cotton fabric, and the danger of overproduction. His specific recommendations were as follows:

Practice Rigid Economy

We should continue our present policy of rigid economy. Every enterprise and every department within it should be placed under budgetary control. There is another point we can well afford to emphasize. In times past this industry was favored by fortune. Now we find that we must adjust ourselves from a condition of great prosperity to one of nip and tuck profits. We can no longer sustain the character of service we were able to give in the days when we could be lavish in our expenditures. Our income has been drastically curtailed and we must constantly study ways and means of reducing costs. This is particularly true of field selling expenses. We should adopt more modern ways of distributing our merchandise and above all try to avoid nonproductive competition by limiting the number of our branch house establishments and eliminating unnecessary operations or wasteful practices.

Establish a Code of Ethics

The United States Chamber of Commerce at its annual meeting last May adopted a business code called "Principles of Business Conduct." In submitting these principles for ratification they made this statement: "A code, or a creed, or a statement of business conduct (call it what you will) is essential to securing uniformity in thought and action amongst groups composed of numerous units."

Personally, I have been greatly impressed during recent months with the fact that we need a business code in the rubber industry and I recommend that steps be taken to formulate and circularize such a code or creed.

Work for Sound Manufacturing and Trade Practices

Just as it is beneficial for a group of companies to work together cooperatively in an association such as ours, so it is likewise advantageous for an association to cooperate actively with other associations in the extension of the best interests of trade and commerce.

Study New Uses of Rubber

One of the most important considerations before any industry is to find new uses for its product. In this respect the rubber industry has always been aggressive and we now have approximately thirty thousand separate applications of rubber usage, but we should constantly study to enlarge the sphere of its present usefulness in fields where it has not yet had its broadest possible application.

Stimulate Wider Use of Motor Transport

The interests of rubber and motor transport are mutual. One of the greatest, if not the greatest, problem of the age is transportation. Great as has been the progress of the automotive industry, much can still be done to increase its field and scope of usefulness, and I recommend that this association cooperate actively with other allied associations in establishing not only a wider use of commercial vehicles, but in stimulating touring by motor car owners in general, in which direction much remains to be done.

Place Industry on Profit-Making Basis

Finally, gentlemen, the message that is uppermost in my mind is one of proper return on the capital invested in our industry. The real test of business management is the ability to earn sufficient profits to pay its obligations, which obviously must include dividends on common and preferred stocks, and to provide a reasonable sum for reserves. When I make the challenging statement that the rubber industry is one of the most useful and absolutely essential in the welfare and progress of our country, it is in no sense a boast, but merely a temperate statement of fact. In the rubber industry we have suffered severely in the past and we owe it to our stockholders and the public we serve to place our business on a healthy and profitable basis, and I recommend that we work individually and collectively to this end.

General Manager's Report

A 22-page report of Rubber Association activities during 1924, prepared by A. L. Viles, general manager, was distributed at the annual meeting. It summarizes the many and varied activities of the organization and indicates the importance of the work being accomplished, notably the great strides in standardization of balloon tires, hard rubber, etc., accounting practices, and in purchasing specifications for rubber goods. Its various sections, with marginal subheads for ready reference, are devoted chiefly to matters connected with manufacturing, merchandising and traffic conditions, foreign trade, accounting statistics, cooperation with other organizations and miscellaneous activities.

In the introduction, Mr. Viles urges the need of having a convention of all branches of the industry once a year, preferably in the early fall, when members can spare two or three days for discussion and action on matters of common interest.

HAND STAMP AND STENCIL INDUSTRY ENLARGING

The biennial census of manufactures for 1923 shows, according to the Department of Commerce, that the establishments engaged primarily in the manufacture of hand stamps, stencils, and brands reported in that year such products to the value of $10,919,846, together with other classes of products valued at $81,500, making a total of $11,001,346. The total number of establishments reporting in 1923 is 255, as compared with 234 for 1921.

Inventory—Production—Domestic and Foreign Shipments of Pneumatic Casings—Inner Tubes—Solid Tires

	Pneumatic Casings				Inner Tubes				Solid and Cushion Tires			
	No. Mfrs. Reporting	Inventory	Production	Shipments	No. Mfrs. Reporting	Inventory	Production	Shipments	No. Mfrs. Reporting	Inventory	Production	Shipments
Twelve months, 1922	..	58,401,086	30,698,139	29,221,899	..	72,463,938	38,137,181	36,656,435	..	2,320,650	786,603	688,845
Twelve months, 1923	..	67,448,419	33,933,936	32,991,810	..	87,807,770	45,128,083	43,554,963	..	3,013,674	692,148	690,090
1924												
January	56	4,808,084	3,220,292	2,838,570	51	6,720,247	3,887,959	3,542,500	10	182,782	53,604	47,295
February	55	5,265,133	3,278,674	2,866,626	50	7,339,307	4,067,631	3,397,668	10	188,519	60,646	52,965
March	57	5,763,084	3,427,692	2,990,872	53	8,157,704	4,218,950	3,500,105	10	203,608	68,662	61,482
April	60	6,164,226	3,307,478	3,013,441	54	8,627,343	4,035,242	3,586,279	10	212,419	69,534	58,486
May	58	6,331,193	3,038,586	2,769,970	53	8,761,812	3,744,108	3,648,490	10	219,538	63,901	60,267
June	55	6,155,537	2,629,742	2,753,143	51	8,166,158	3,493,431	3,964,609	10	212,704	50,887	58,716
July	52	5,138,474	2,552,329	3,561,110	49	6,634,022	3,857,289	5,392,253	10	202,850	42,498	51,449
August	52	4,477,016	3,234,741	4,193,114	48	5,758,310	5,015,687	5,619,914	9	183,159	52,516	60,684
September	56	4,524,405	3,530,878	3,404,239	51	6,038,868	5,506,442	5,180,804	10	179,927	54,106	59,581
October	56	5,338,380	3,877,076	3,146,761	54	7,352,200	5,895,797	4,274,916	10	182,400	58,938	58,078
November	54	5,207,340	3,189,832	3,359,783	52	7,667,988	4,602,141	4,749,146	10	185,776	49,349	49,748

"Production" and "Shipment" figures cover the entire month for which each report is made. "Inventory" is reported as of the last day of each month.

"Inventory" includes tires and tubes constituting domestic stock in factory and in transit to, or at, warehouses, branches (if any), or in possession of dealers on consignment basis, and, as a total represents all tires and tubes still owned by manufacturers as a domestic stock.

"Shipment" prior to January, 1924, includes only stock forwarded to a purchaser and not stock forwarded to warehouse, branch, on consignment basis, or abroad. After January, 1924, shipments abroad are included in these figures.

The National Automobile Show

Balloon Tires Featured—Growth of the Automobile Industry—Automobile Accessories—The New Drop Rim—The Ford Show

THE Silver Jubilee Exposition of the National Automobile Chamber of Commerce was celebrated by the Twenty-fifth Annual Automobile Show held January 3-10, 1925, in cooperation with the Motor and Accessories Manufacturers Association in the Armory of the 258th Field Artillery, New York, N. Y.

This exhibition was most artistically staged with roof and wall decorations, the chief feature of the hall being a storied silver tower placed in the center of the vast exhibition area, surrounded by eagle-topped kiosks and illuminated from pillars of vari-colored lights. By its design and the inscriptions which it bore the tower symbolized the triumphal progress of the automobile industry.

This exhibition more than maintained the high standards of all that have preceded and featured every new departure in automobile development. One might judge from this show that beauty of design, decoration, motive power, equipment and accessories are nearing perfection but for the fact that development sets new goals for designer and inventor.

Notable features of the show were the prevalence of closed car models, elimination of disk wheels in favor of wood artillery wheels, and some gain in favor by wire wheels.

Silver Tower at New York Automobile Show

Balloon Tires

Fully three-quarters of all makes of cars were equipped with balloon tires. This advance in favor of low-pressure tires is due to their rapid standardization in size and construction, according to loads to be carried, also to the education of the motoring public which has gained practical experience in their care and proper inflation pressure.

The phenomenal growth of the automobile industry during the past quarter of a century is indicated in the following outstanding facts.

Growth of the Automobile Industry

In its first twenty years the industry reached a greater capitalization than that reached by all the national banks of the country in 57 years. The wholesale value of its products ranks third among all the industries. World registration of motor vehicles is estimated at 19,500,000, of which 17,500,000 are in the United States. Of the latter 4,500,000 are owned on American farms.

This country makes 90 per cent of the world production of motor vehicles and the industry gives employment to 2,750,000 workers. Showing the automobile's relation to other business, in 1924 the automobile industry used 70 per cent of all the rubber produced. In other words, 605,000,000 pounds of rubber were consumed in tires, which also required 191,000,000 pounds of cotton fabric.

Automobile Accessories

The display of accessories was quite as varied as that of the previous show, although made by only 175 concerns instead of 222 last year. These exhibits were arranged at one end of the floor area and along one of the long sides. The range of goods exhibited included practically everything so far devised for the comfort, convenience or safety of the motorist.

Among the interesting exhibits of accessories was that made by A. Schrader's Son, Inc., Brooklyn, N. Y. The display included their well known tire valves, which are practically standard the world over, dust caps, air chucks, pump connections, various convenient tire valve repair tools, and several types of tire pressure gages. Of the latter the new ball-foot gage for balloon tires was especially featured, drawing attention to its easy applicability to the tire valve even when the space between hub and rim is limited.

The New Drop-Rim

The drop-rim was shown by the Wire Wheel Corporation of America, Buffalo, N. Y. The chief advantages of this rim are elimination of the tire flap used to protect the inner tube when the ordinary rim is used, and the ease with which the largest tires may be removed by hand by reason of the central drop of the rim. The drop rim is of English origin and dates from the days of the popularity of bicycling.

Another wheel development gaining in favor is the expanded wheel shown by the Smith Wheel, Inc., Syracuse, N. Y. This is a cast hollow spoke wheel of malleable iron alloy. Its special expansion heat treatment insures a permanent round, true wheel. Its other features are designed to make it secure, noiseless, and far more durable than the wood spoke wheel.

THE FORD SHOW

The Ford Motor Co. held its annual show at the Ford building on Broadway, at Fifty-fourth street, New York, January 2-10, 1925.

A unique feature added to the usual interesting display of cars, tractors, and industrial plant models was an educational exhibit of the assembly of 40 cars a day on a nickel-plated conveyor line patterned after those of larger scale used in the Ford Company's Detroit plant and car assembly branch plants. Four cars were in process of assembly on the conveyor and as each one neared the end of the line its motor was started and the car driven off under its own power ready for delivery to the customer.

AMERICAN EXPORTS OF TIRE REPAIR MATERIAL

Throughout the first eight months of the year 1924 there was without exception a steady increase in the values of exports of American tire repair material, the figure rising from $23,144 in January to $56,787 in August. The total value for this eight months period of exports is estimated at $339,999 as compared with $310,034 for the entire year 1922. Exports for September and October of the past year were valued at $49,284 and $54,504, respectively.

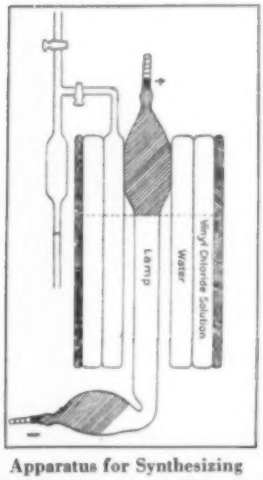
What the Rubber Chemists Are Doing

Synthetic Rubber by Ultra-Violet Light

THE polymerization of vinyl chloride into rubber by the action of ultra-violet light has been accomplished by Joh Plotnikow. The results of his experiments as recorded[1] are given below in condensed form.

The unsaturated organic combinations of the ethylene and acetylene series easily polymerize in the light to oils, resins and rubber, which have great technical importance. Vinyl chloride was selected for this investigation because it easily polymerizes in extreme ultra-violet of the quartz lamp and yields a very uniform product.

Method



Apparatus for Synthesizing Rubber from Vinyl Chloride

All experiments were made with 2½ per cent solution of vinyl chloride in 99 per cent alcohol up to 21 degrees C. The reaction took place best in methyl alcohol. The addition of water to the alcohol resulted in a very strong negative influence.

The diagrammatic arrangement of the apparatus in which polymerization of vinyl chloride solution was effected is shown in the accompanying illustration. The central feature of tubular arrangement is the quartz lamp. This is surrounded by a water cooling system interposed between the lamp and the reacting solution of vinyl chloride.

General Observations

According to Ostromislensky the treatment of vinyl chloride rubber with zinc or magnesium in alcoholic solutions would change it into pure divinyl or erythene rubber. These laboratory methods would require to be tested and developed on a technical scale. If they proved successful for obtaining a pure rubber the method of making rubber photo-chemically would be very simple.

Suitable sources and the progressive stages in the production of vinyl chloride for this synthesis are indicated in the following table:

Potatoes
Alcohol
Ethylene chloride
This treated with K O H gives
Vinyl chloride
Carbon

Carbide
Acetylene
This gives in presence of
Mercury salts
Vinyl chloride

$C H_2 : C H Cl$

↓

Sunlight in presence of uranium salts (Plotnikow)

↓

Rubber Chloride $(C H_2 : C H Cl)_{16}$

↓

After Chlorinization—Ethylene rubber

[1] "Photo polymerization of Vinyl Chloride and the Rubber Problem." By Joh Plotnikow. *Zeitschrift für Wissenshaftliche Photographie, Photophysik, und Photochemie*, 1922, 21, 117-133.

Summary

The chief results of this investigation may briefly be summarized as follows: Vinyl chloride as opposed to ethylene very easily polymerizes in solvents in extreme ultra-violet to a uniform product in which the chloride atom serves as an inner catalyzer. The mechanism of the reaction process could not at the time be determined. The temperature coefficient was found to be 1.03. Methyl and ethyl alcohols were found to be the most appropriate solvents. The salts of manganese, cobalt, nickel, copper and vanadium render the reaction sensitive to visible light. Carbon tetrachloride accelerates the action in ultra-violet light. Uranium salts showed the most powerful effect and were utilized in the production of the photo chemical product in sunlight.

Recent Advances in Rubber Industry[1]

By Harry L. Fisher[2]

The author of this paper interestingly outlines and reviews the outstanding discoveries and researches in the chemistry of rubber which have been made within the past year, stating the advances made in the following summary.

(1) The "monkey hairs" found in the middle German lignite deposits consist of soft and hard fossil vulcanized rubber. (2) Rubber has been vulcanized in the form of latex. (3) The resin of crude rubber contains three organic acids, heveic, oleic, and linoleic. Without them ordinary inorganic accelerators do not function. (4) The most highly purified rubber known has been described and its analysis substantiates again the $C_5 H_8$ ratio. (5) The study of the hydrogenation of rubber has definitely established that hydro-rubber is a colloidal paraffin-like hydrocarbon. (6) Evidence is accumulating on the existence of a long open chain structure of the rubber hydrocarbon, of not less than 50 carbon atoms. (7) Methyl and ethyl hydro-rubber have been prepared. (8) Rubber has been crystallized and a study of the different crystalline structures leads to the conclusion that there are several chemically different substances in the pure rubber. Since rubber is capable of crystallization, it does not seem probable that the original rubber molecule is extraordinarily large.

[1] An address given before the Inter-Sectional Meeting of the American Chemical Society at Cleveland, Ohio, November 6, 1924.
[2] The B. F. Goodrich Co., Akron, Ohio.

Water Dispersion of Rubber[1]

Rubber latex, despite its external resemblance to an emulsion, is from a colloid-chemical point of view, a suspension. This is proved by the fact that in dilute or concentrated latex the proportion of specific gravity to concentration is strictly linear.

In concentrations, corresponding to 35 per cent rubber, the viscosity curve spontaneously changes its directions, which is typical of suspensoids. On the other hand, true rubber solutions show a gradual bending of the viscosity curve. The differences are due to the fact that in latex the rubber particles are relatively little swollen, while in solutions in organic solvents the particles expand to such an extent that we can refer to it only as a disperse phase when dilution has been excessive. The rubber particles themselves must therefore be considered hydrophobial.

In connection with the above it should be noted that for this reason relatively small quantities of water already greatly increase the viscosity in benzol solutions of rubber.

Various coagulants destroy the equilibrium between disperse phase and the means of dispersion and the former turns into

[1] *Ueber Wasserbindung von Kautschuk*, F. Kirchhof, Kolloid-Zeitschrift, December, 1924, 362-367.

coagulum, which according to the type of coagulation, contains part or the whole of the non-rubber substances, besides rubber and water.

To a certain extent coagulation represents an enormous synaresis wherein the water content of the original system, from 60-80 per cent, is reduced to about half this value.

For a long time the opinion was held that coagulated rubber was irreversible. According to recent communications an American, William Beach Pratt, succeeded in dispersing coagulated crude rubber in water. According to Tuttle, Pratt's dispersion has all the properties of the original latex, the same particle size, Brownian movement, etc.

The present author has confirmed this in so far as a latex, preserved with ammonia but coagulated spontaneously owing to putrefaction, has been practically completely dispersed again by shaking it with distilled water. This dispersion was stable and passed through ordinary filter paper like the original diluted latex. The auto-coagulum was a porridge-like mass containing the whole of the disperser, in contrast to the lumpy, irreversible gel forms.

Therefore, the coagulation process seems within certain limits to be reversible; that is, the rubber globules which were almost brought in contact with each other may be dispersed. This capacity to disperse is due to the fact that in spontaneous coagulation the protective coating of the rubber particles is retained. To a certain extent this ought to be true of crude rubber obtained by drying.

The moisture content of crude rubber may differ for the same grade according to the method of preparation, temperature and relative humidity of the air. This fact is important also commercially, as even small quantities of moisture cause porosity under certain circumstances.

To test the absorption of water by different crude rubbers, samples of rubber, some raw, others washed, air-dried in sheet form, and others extracted with acetone were used. The absorption of water proved greatest for the crude, considerably less for the washed and air-dried rubber, while for the acetone extracted it was again reduced one-half to one-third of the latter value. Temperature and duration of swelling was the same in all cases.

Kolloid Problems and the Rubber Industry

The authors considered it worth while to investigate the causes and nature of the changes that occur in rubber during milling. The tests made were quite simple. A 1 per cent benzol solution of ordinary plantation standard pale crêpe was prepared. The solution was quite viscous. By the Ostwald viscosimeter it showed a flowing period of 135 minutes and 50 seconds. Similarly an approximately 2 per cent solution was prepared of the same crude rubber which had previously been milled to death. This solution showed a flowing period of 8 minutes and 2 seconds. Both solutions were examined with a Zeiss cardioid ultramicroscope. The solution of unmilled rubber could not be resolved in the ultramicroscope. Only isolated submicrones, probably arising from impurities, could be observed. The crude rubber mass itself was invisible; the position of the single jelly particles could only be guessed at from the isolated sub-microns absorbed on the borders of the different jelly flakes, the jelly itself being invisible.

The ultra-microscopic picture of the overmilled solution was totally different. A number of rapidly moving, luminous curved little disks indicated the presence of sub-microscopical particles of rubber. It was found that the number of the sub-microns increased with the duration of milling, thus establishing qualitatively a parallelism between decrease in viscosity and increase in optical resolvability.

[1] "Kolloid Problem and the Rubber Industry." By P. Klein and P. Stamberger, *Kolloid-Zeitschrift*, December, 1924, 362-366.

Tests with equiviscous solutions of different concentrations, prepared with unmilled and overmilled rubber, yielded similar results. In an overmilled rubber solution of 10 per cent concentration the high viscosity of the solution caused a very slow, trembling, Brownian movement.

The more or less complete optical homogeneity of unmilled rubber solutions is replaced by complete optical heterogeneity in overmilled rubber solutions.

Hence the theory that in unmilled rubber there is a structure which permits an extraordinarily large quantity of solvent to be absorbed so that the breaking coefficient of the resulting swelling is equal to or quite that of the solvent, thereby excluding resolvability in the ultra-microscope.

This capacity to absorb solvent is diminished by milling. The structure of the crude rubber itself is destroyed by milling, submicroscopic portions are torn off and no longer have the capacity to absorb the same quantity of solvent as the undisturbed structure of the unmilled rubber.

Unmilled raw rubber resembles the framework of a bridge in collapsed condition, occupying little room. The addition of solvent resembles in its action the setting up of the framework in which the individual rigid girders separate as far as they can until a state of equilibrium is obtained. In overmilled rubber the picture resembles a disordered mass of single girders.

The above theory was proved by two kinds of tests. In one methylene blue was added to latex. The latex was alternately centrifuged and diluted to purify it and the crude rubber obtained by drying. Unmilled rubber thus obtained placed in benzol always swelled to a certain sharply defined limit, which was not exceeded. After three months very slight discoloration of the rest of the liquid was noted, but even after nine months the boundary line remained unaltered. In overmilled rubber similarly prepared, after 14 days, without mixing or stirring, the entire solution was uniformly colored blue.

Tests showed that unmilled standard pale crêpe reached a swelling maximum of 2,030 per cent in 20 days, while the overmilled rubber reached its maximum of 815 per cent in 14 days, thus demonstrating that milling rubber diminishes its capacity to swell in solvents.

FIRST CHEMICAL EQUIPMENT EXPOSITION IS INNOVATION

Realizing the importance of chemical engineering, as well as chemical processes and equipment in present-day industrial production, the Association of Chemical Equipment Manufacturers, with the endorsement of the American Institute of Chemical Engineers, has inaugurated the first Chemical Equipment Exposition to be held in this country, the displays to be exhibited in the State Armory, Providence, Rhode Island, from June 22 to 27 inclusive, 1925. While the general public will not be admitted, there will be every opportunity for industrial and technical men to develop both a sounder and wider knowledge of chemistry in industry. The headquarters of the Association of Chemical Equipment Manufacturers are at 1328 Broadway, New York, N. Y., where information will be given to those who plan to attend the exposition.

SPRING MEETING OF AMERICAN CHEMICAL SOCIETY

The spring meeting of the American Chemical Society will be held in Baltimore, Maryland, April 7 to 10. The general meeting will be held in the War Memorial Building. Sectional meetings will be scheduled in the Johns Hopkins University group of buildings at Homewood.

"PNEUMATIC TIRES," BY HENRY C. PEARSON. AN ENCYCLOPEDIA of tire manufacture, repair, rebuilding, machinery and processes.

Chemical Patents

The United States

COMPOSITION. Tire casing composition comprising powdered graphite, powdered mica and lampblack.—C. W. Schnell, Fresno, California, United States patent No. 1,519,268.

LUBRICANT FOR RUBBER. A lubricant for preventing adhesion of rubber surfaces during vulcanization, comprising liquid latex and mica.—Melvon A. Marquette, assignor to The Fisk Rubber Co., both of Chicopee Falls, Massachusetts. United States patent No. 1,519,547.

RUBBER COMPOSITION. Rubber, latex, mineral rubber, rubber solution and sulphur.—George W. Gish. United States patent No. 1,519,729.

VULCANIZATION. The incorporation of a material formed by the reaction of anhydrous zinc sulphate with ammonia with addition of free zinc oxide.—Herbert Skelton, Middleton, assignor of two-thirds to T. H. Roberts Surrey, and H. B. R. Clarke, Radlett Herts, all in England. United States patent No. 1,521,720.

VULCANIZATION. The use in rubber compositions of an aromatic disubstituted guanidine dibenzyl dithio carbamate as an ingredient.—M. L. Weiss, Belmar, New Jersey, assignor to Dovan Chemical Corporation, Wilmington, Delaware. United States patent No. 1,521,739.

VULCANIZATION PROCESS AND PRODUCT. The use of a cyclic metallic dithio carbamate as a vulcanizing ingredient.—S. M. Cadwell, New York, N. Y., and C. D. Mason, Bloomfield, New Jersey, assignors to The Naugatuck Chemical Co., Naugatuck, Connecticut, United States patent No. 1,522,712.

VULCANIZATION METHOD. In a rubber mixing the use of a curing agent combined with a pigment.—W. O. Hamister, and V. C. Hamister, Cleveland, Ohio, assignors to The Goodyear Tire & Rubber Co., Akron, Ohio, and one-half to National Carbon Co., New York, N. Y. United States patent No. 1,522,954.

The United Kingdom

UTILIZING RUBBER LATEX. Partial coagulation of latex into a paste formed into sheets or articles, or applied to fabrics.—C. C. Loomis, 185 Valentine Lane and H. E. Stump, 62 Pierpont street, both in New York, N. Y. British patents No. 223,263 and 223,264.

RUBBER INNER TUBE MIXING. St. Helens Cable & Rubber Co., Ltd. and J. H. C. Brooking, Slough, Buckinghamshire. British patent No. 223,266.

ELECTRIC INSULATION. An electric insulating material of high resistance and low electrostatic capacity, adaptable for prolonged use in submarine cables without deterioration and approximately as good in these respects as gutta percha.—Western Electric Co., Ltd., Connaught House, Aldwych, London. British patent No. 223,644.

VULCANIZATION. Rubber is heated with a phenol, an aldehyde, and a halogen, and the reaction product is molded to form articles for which hard rubber or synthetic resins are usually employed.—Revere Rubber Co., Providence, Rhode Island, assignees of J. McGavack, Elmhurst, Long Island, N. Y. British patent No. 223,873.

The Dominion of Canada

WATER DISPERSED BITUMINOUS COMPOSITIONS. Process of water dispersion and applications of product in waterproofing, paint, fibrous and felt compositions.—Lester Kirschbraun, Chicago, Illinois. Canadian patents Nos. 245,710 to 245,715 inclusive.

VULCANIZATION ACCELERATOR. The process of vulcanizing rubber characterized by heating rubber and a vulcanizing agent with diphenyl-orthotolyl guanidine.—The Atlantic Dyestuff Co., Boston, assignee of Albert C. Burrage, Jr., Hamilton, both in Massachusetts. Canadian patent No. 245,929.

VULCANIZATION ACCELERATOR. A method of preparing diphenyl-orthotolyl guanidine which comprises reacting upon diphenylthiourea with orthotoluidine and lead oxide in the presence of an organic solvent.—The Atlantic Dye Stuff Co., Boston, assignee of Albert C. Burrage, Jr., Hamilton, both in Massachusetts. Canadian patent No. 245,930.

ACCELERATOR VULCANIZATION CERTIFICATES

The Roessler & Hasslacher Chemical Co., 7 East Forty-second street, New York, N. Y., has recently adopted the commendable policy of furnishing certificates of vulcanization on all their accelerators. These certificates are based on the laboratory tests which are made of every lot of standard accelerators, and shows the respective strain curve for a given accelerator when used in a stated comparative formula and cured in a steam press at a certain temperature for the proper length of time. The certificate is signed by a technologist of the company and forms a written guarantee of the quality of the accelerator.

Interesting Letters from Our Readers

American Psychology and British Golf Balls

TO THE EDITOR:

DEAR SIR: Although the United States is the world's largest producer of golf balls, and the American-made article has no superior, yet imports of foreign golf balls are steadily increasing. During 1923 imports from England, Scotland and France numbered 2,836,141 balls, value $1,173,659, with a unit value of .413 cents. Imports for the first ten months of 1924 were 2,579,444 balls, value $960,990, with a unit value of .364 cents. While imports are increasing import values are declining.

Why American golfers prefer to pay more for foreign balls that are often inferior is mostly psychological. There is a large number of American golfers who have decided preference for anything that is English, believing that the trade mark assures superiority. Moreover, the game originated in England, so buy English balls.

The game of golf in the United States is thirty-six years old, dating from the organization, on November 18, 1888, of the St. Andrews Golf Club of New York. At that time there were not more than thirty golf clubs and less than 100,000 golfers. Today there are 3,000 golf clubs and 2,000,000 golfers in the United States.

The manufacture of golf balls has grown from an annual production of 800,000 in 1897 to 50,000,000, the estimated number made annually in this country, which is today the largest producer of golf balls in the world.

From the crudely made Haskell ball of 27 years ago, the American product, through technical and mechanical research, has been perfected and its superiority demonstrated. It is indorsed by professionals and expert amateurs. By far the greatest number of tournaments in the United States and a goodly number in England have been won by American-made balls.

GOLFER.

New York, N. Y.
January 10, 1925.

BALLOON TIRE INFLATION

Investigations carried on by The Miller Rubber Co., Akron, Ohio, show that it takes only two weeks for balloon tires to decrease inflation 25 per cent, while the loss in a high pressure tire is not usually noticed for a month. Therefore balloon tires require reinflation about once in two weeks to insure easy steering and thoroughly satisfactory results.

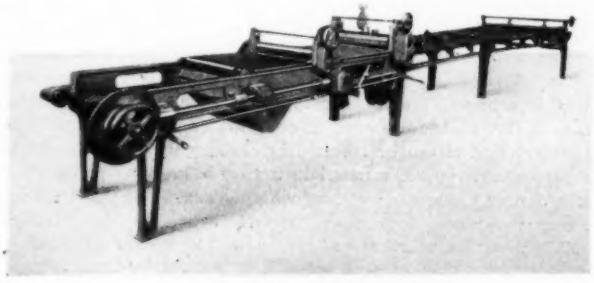
REPLETE WITH INFORMATION FOR RUBBER MANUFACTURERS—H. C. Pearson's "Crude Rubber and Compounding Ingredients."

New Machines and Appliances

Belt-Making Machine

THE latest type of machine for making rubber belting in all widths up to 20 inches is here illustrated.

The machine comprises several sections mounted on cast iron legs. The first section is a plain wood surface table over which the flat belt stock is drawn under smoothing rolls past adjustable



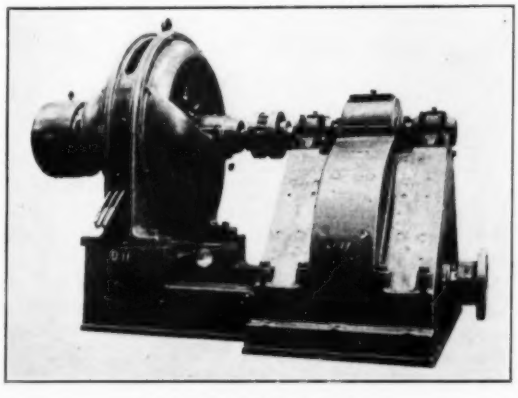
Farrel 20-Inch Belt Machine

grooved wheels which fold the material over to make the desired width. At the end of the folding table is a pair of adjustable pressing rolls or calender for consolidating the folded plies. Above the pressing rolls are mounted reels for carrying rubber cord and seam strip rubber for finishing the joint in the belt cover. Beyond the first presser rolls is a second pair which serves to both press and pull the belt which descends from these rolls into a soapstone box with a turning roller in the bottom and from which it emerges through a pair of circular brushing rolls for removal of the excess of soapstone. The final attachment of the machine is the wind-up for reeling the finished belt ready for curing.

The movements of the various rolls of the machine are hand controlled in unison by rod connections to the several mechanisms. —Farrel Foundry & Machine Co., Ansonia, Connecticut.

Reduction Gearing

Two new types of reduction gears have recently been developed. The one here pictured is especially desirable where the line shaft



Poole Reduction Gearing

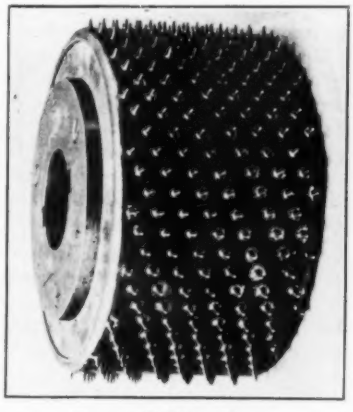
is close to the floor because the high speed shaft or driving pinion is located in the top of the casing and the driven shaft is directly under the pinion shaft and just below or near the floor line.

For low speed drives thorough lubrication is obtained by an improved splash and gravity system in which the gear dips in the oil sufficiently to carry oil to a reservoir in the upper casing, from which it feeds to all bearings and directly between the gear teeth at the line of contact.

For turbine and other high speed drives, an oil pump and cooler is provided, thus insuring cool oil under pressure to the bearings and gear teeth.—Poole Engineering & Machine Co., Baltimore, Maryland.

Rubber Buffing Rasp

The illustration represents a novel device known as a rubber plane, intended to supplant the use of rasps, wire brushes and abrasive wheels for cleaning and buffing tires and other rubber products. This tool is also effective on many unvulcanized compounds.



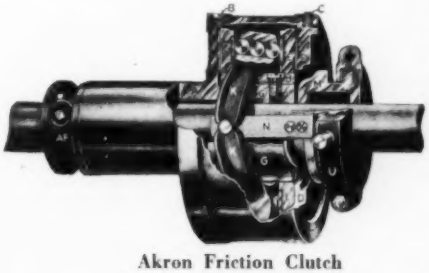
Banner Rubber Plane

The cutting effect is secured by the tearing action of numerous steel pins set spirally in the face of the cylinder. The design eliminates clogging of the cutters with stock and by reversing the plane on the shaft the cutting pins are maintained sharp, thus insuring long and satisfactory service.

The plane is made in diameters from 8 to 12 inches and in widths of face from 1½ to 3 inches.—The Banner Machine Co., Columbiana, Ohio.

Friction Clutch for Tire Building Machines

Machinery and devices for facilitating rubber working that meet the approval of the world's largest rubber manufacturing center merit the attention of the trade generally. In this class is the friction clutch here illustrated. One such clutch ran practically 24 hours every working day before replacement. Long life and smooth positive action are thus its outstanding features.

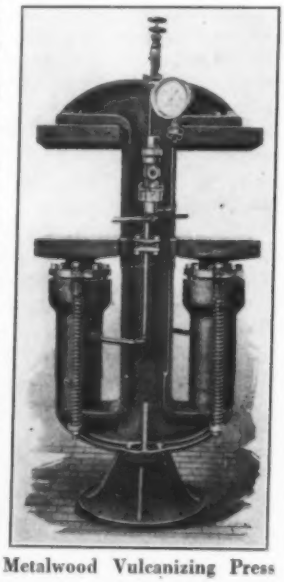


Akron Friction Clutch

It is entirely of metal, works in oil and is adjustable to slip under any given overload. Other practical advantages characterize this clutch, which has been applied to nearly 1,000 individual machines in one of the leading tire factories.—The Williams Foundry & Machine Co., Akron, Ohio.

Duplex Vulcanizing Press

A new type of duplex vulcanizing press is here illustrated. It is hydraulically operated, being rated at 18 tons working pressure on each side at 1,500 pounds accumulator line pressure, or 15 tons each side at 1,300 pounds. Its stroke is 12 inches, platen opening 16 inches, platen size 14 by 18 inches. The press is very compact. Its working space when platens are separated is 40 inches; over-all floor space, 38 by 30 inches; height 5 feet 8 inches; weight 3,000 pounds.



Metalwood Vulcanizing Press

This press is well adapted to handling special work such as can be cured in molds placed one upon another or objects made in molds that are too high to be accommodated in presses of the usual height of opening.

Another use for this press might be found in curing rock hard coils of square duck packing which requires a long heat and strong compression.—Metalwood Manufacturing Co., Detroit, Michigan.

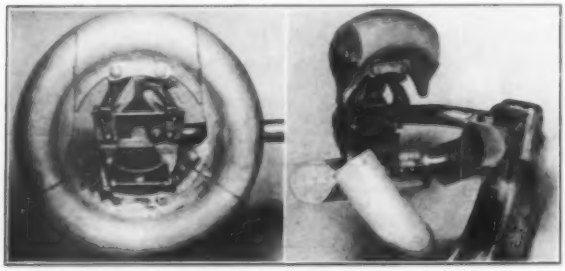
De Laval Flexible Coupling

The illustrated description of the De Laval flexible coupling printed in the January issue of this journal, inadvertently credited to the agents for the appliance, should have been credited to the manufacturers, the De Laval Steam Turbine Co., Trenton, New Jersey.

Unique Core Chuck

The wide demand for balloon tires and the consequent requirements in core and mold equipment offers an opportunity for new developments in labor saving devices. The new core here pictured has been designed to meet the requirements of modern tire production.

The illustration shows the Unique core as assembled on the chuck ready for building the tire. When collapsing the core to remove the tire, the swivel hinge permits the operator to pull one section out of the tire at any angle which may be most convenient for stripping that particular size of tire. This results in giving a greater amount of clearance for removing the sections and consequently imparting more freedom and ease in operation as well as reducing the time.



ASSEMBLED SEMI-COLLAPSED

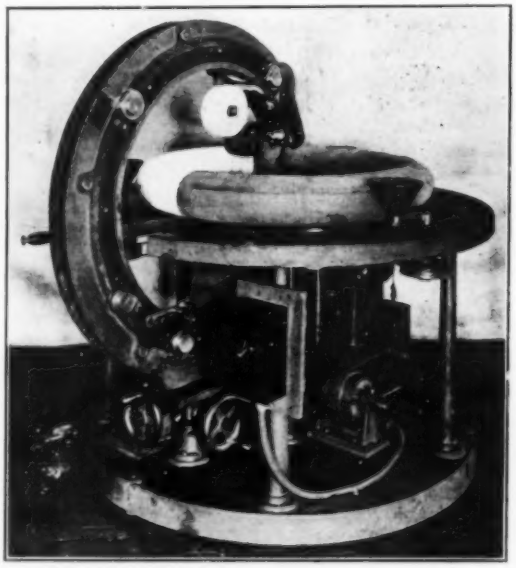
De Mattia Core Chuck

The illustration also shows the core in a semi-collapsed position with the section, operating on the swivel, in an extreme position and completely hiding the swivel hinge. The hinge is of compact construction and is made entirely of steel. In line with the policy of making interchangeable equipment, the hinge has been designed so that it can be applied to any Unique core made heretofore. It is only necessary to remove the side plates of one of the rigid hinges and the swivel hinge can be substituted by the ordinary mechanic. This type of hinge is fully covered by United States patents.—De Mattia Bros., Garfield, New Jersey.

Circular Inner Tube Wrapping Machine

The illustration represents a machine for cloth wrapping inner tubes upon the circular curing mandrels commonly used for balloon tubes and other large section tires.

The machine is motor driven and the mechanism is chiefly located between the circular base and table. The circular raceway is provided for the shuttle carrying the spool of winding table. The shuttle rotates in one direction. Rotation of the circular mandrel can be reversed by shifting the reverse lever in order to back up the mandrel in case of a broken tape or when it is desired to apply more than one wrapping. The mandrels are centered and held down upon the table rollers by three conical rollers which act in unison and are operated by a lever conveniently located. The shuttle head is adjustable both vertically and horizontally to bring the shuttle ring central with the different size mandrels. The machine takes standard mandrels measuring 2½ to 7 inches cross-section and 31 to 33 inches inside diameter.



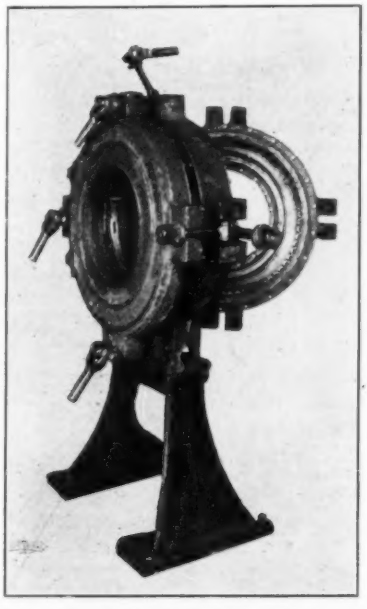
De Laski & Thropp Circular Mandrel Wrapping Machine

Tapes up to 3 inches width can be used. The shuttle has one speed, 125 r. p. m., while 3 speeds are provided for rotating the mandrels in relation to the shuttle. On first, or low speed of mandrel using 2½-inch wide tape, an overlap of about 1¼ inches will be obtained; on second speed an overlap of ¾-inch, and on third speed the pitch is approximately 2½ inches, giving no overlap at the periphery of the mandrel. A variable tension is provided on the tape as it is drawn from the bobbin, which can be 8 inches diameter.

Time required to wrap a mandrel varies from one minute on first speed to ¾ of a minute on second, and ½ on third speed, varying also with the size of the mandrel.—The de Laski & Thropp Circular Woven Tire Co., Trenton, New Jersey.

"Watch Case" Tire Vulcanizer

The new vulcanizer unit here shown is known as the "watch-case" type and comprises two vulcanizers, each of which has two easily accessible compartments. An uncured tire with air bag inserted is placed in the stationary half of each compartment and the other halves are closed like a watch case and locked during the cure.



Akron-Standard Watch-Case Vulcanizer

This equipment offers lower initial cost due to the elimination of vulcanizers, molds, conveying equipment and hydraulic apparatus. It is economical to operate, as the pot heater consumes 26 pounds of steam compared to 12 pounds by the new unit. Each pot heater requires 7,000 gallons of water per day for cooling; the new vulcanizer requires none.

One operator can remove a cured tire and insert an uncured one in 3 minutes. Thus, where a 60-minute cure is used one operator can make 20 of these 3-minute changes and return to the first tire just when it is ready to come out of the heater. Since each unit is double, a line of ten such units can be handled by one man.

A manufacturer can ascertain how many double units his plant would require to give continuous operation for one man by dividing his own curing time, in minutes, by 3 and dividing that result by 2.

A range of flexibility is attained because the inner shells which contain the tire cavity are separate from the vulcanizer. This reduces the obsolescence of equipment and permits shells for different sizes of tires to be fitted in both sides of the same vulcanizer. —The Akron Standard Mold Co., Akron, Ohio.

Machinery Patents

The United States

(1,519,482). BEAD FILLER MACHINE. A machine for making and vulcanizing combined rubber and fabric tire beads comprising two vulcanizing drums with annular molding grooves. A metal band extends tightly around both drums and presses the material to be vulcanized into the molding grooves.—J. A. Bowerman, Thomas Midgley and Martin Castricum, assignors to The Fisk Rubber Co., Chicopee Falls, Massachusetts. United States patent No. 1,519,482.

(1,519,522). APPARATUS FOR MAKING PNEUMATIC TIRE FABRICS. Flexible rubber coated wires are spiraled on a drum and the rubber coating flattened down upon the wires by a press roll which forms a composite sheet of rubber and spiral wire in which each wire is accurately spaced and embedded in a sheet of rubber. —D. M. Weigel, London, England, assignor, by mesne assignments, to The American Wire Cord Tire Co., Wilmington, Delaware. United States patent No. 1,519,522.

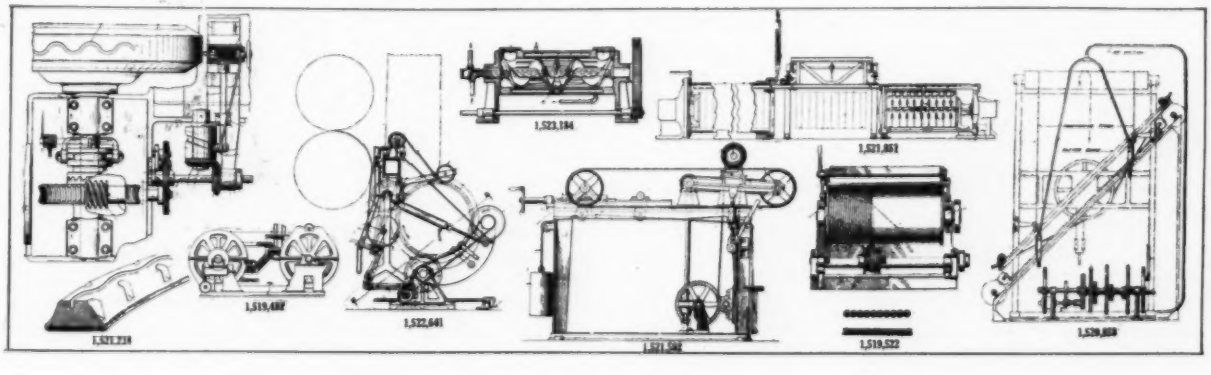
(1,520,858). FABRIC HANDLING MACHINE. A flexible system of air suction piping arranged in proper position to pick off from a vertical bias cutter a severed ply, the cycle of the pick-off and timing of the air suction being positively related by a system of gearing.—J. F. Cullen, Portland, Oregon, assignor to Kelly-Springfield Tire Co., Cumberland, Maryland. United States patent No. 1,520,858.

(1,521,238). GROOVING MACHINE. This apparatus is designed for cutting a sinuous peripheral groove in the tread portion of a solid rubber tire. The reciprocating movement of the tool slide together with the rotation of the tire, causes the groove to be cut in a wavy form, and the coordinated, oscillating movement of the tool holder causes the knife always to adapt its angular position to the sinuous course of the groove.—John R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y. United States patent No. 1,521,238.

(1,521,582). TREAD BUFFING MACHINE. This machine is a unit of two buffing machines, in each of which a tread strip is adjustable over a pair of pulleys by means of which the strips travel under the buffers and are roughened up for cementing attachment on their under side, which is turned toward the buffing wheels.—William C. Stevens, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio. United States patent No. 1,521,582.

(1,521,851). VULCANIZING SYSTEM. The system comprises one or more vulcanizing presses and one or more set-up or assembling presses with means operatively intermediate the two types of presses for transferring a press load or batch of molds as a unit from the vulcanizing presses to the set-up presses, and vice versa.—A. O. Abbott, Jr., assignor to Morgan & Wright, both of Detroit, Michigan. United States patent No. 1,521,851.

(1,522,641). TIRE BUILDING MACHINE. A machine for building up cushion tires of the "hollow center" type wherein the sheeted rubber stock is taken direct from the calender and wound on a metallic base ring to form the tire. The stock should be cut into strips of gradually diminishing widths that the cross-sectional outline of the tire shall approximate the desired final form.—Robert McClenathen, assignor to Kelly-Springfield Tire Co., Cumberland, Maryland. United States patent No. 1,522,641.



(1,523,184). MIXING MACHINE. The mixing is done while conveying the material through the chamber from a point of lesser to a point of greater pressure, and a passageway having a portion of its length of increasing depth or cross sectional area for conveying the material after it has been so moved. The movement of the material is due to the pressure behind it.—Ernst Eger, States patent No. 1,523,184.

Other Machinery Patents

The United States

1,519,546 Tire building apparatus. M. A. Marquette, assignor to The Fisk Rubber Co., both of Chicopee Falls, Massachusetts.
1,519,602 Extensometer. E. C. Zimmerman and I. Williams, assignors to The Firestone Tire & Rubber Co., all of Akron, Ohio.
1,520,001 Machine for treating rubber and other heavy plastic material. F. H. Banbury, Ansonia, Connecticut, assignor to Birmingham Iron Foundry, Derby, Connecticut.
1,520,663 Tire stripping machine. E. D. Putt, Akron, Ohio, assignor to The Firestone Tire & Rubber Co., Akron, Ohio.
1,521,850 Bead placing ring. W. E. Wilson, Akron, Ohio.
1,522,446 Mold handling mechanism for tire curing apparatus. R. D. Haas, Gaffney, South Carolina.
1,522,461 Brake-band-lining-drilling machine. O. L. Smith, Rydal, assignor to Penn Rivet corporation, Philadelphia, both in Pennsylvania.
1,522,493 Sectional mold for repairing tires. R. A. Brooks, Chicago, Illinois, assignor by mesne assignments to Western Vulcanizing Equipment Co., a corporation of Illinois.
1,522,566 Mold for making resilient heels. E. C. Weise, Milwaukee, Wisconsin, assignor by mesne assignments, to The Fisk Rubber Co., Chicopee Falls, Massachusetts.
1,522,780 Device to facilitate stripping articles from vulcanizing molds. D. E. Hennessy, Milwaukee, Wisconsin, assignor to The Fisk Tire & Rubber Co., Chicopee Falls, Massachusetts.
1,523,327 Washer-placing apparatus. J. L. Wilson, Kenmore, assignor to The Miller Rubber Co., Akron, both in Ohio.

The Dominion of Canada

245,422 Tire stripping machine. The Firestone Tire & Rubber Co., of Canada, Ltd., Hamilton, Ontario, assignee of W. C. Stevens, Akron, Ohio, U. S. A.
245,425 Hose wrapping machine. The Goodyear Tire & Rubber Co., assignee of E. G. Kimmich, both of Akron, Ohio, U. S. A.
245,622 Doctor for calenders. The Vickerys (1920), Ltd., assignee of F. W. Vickery, both in London, England.
245,949 Apparatus for coating and drying fabrics. The Firestone Tire & Rubber Co. of Canada, Ltd., Hamilton, Ontario, assignee of R. L. Jones, Akron, Ohio, U. S. A.
245,950 Collapsible tire core. The Firestone Tire & Rubber Co., of Canada, Ltd., Hamilton, Ontario, assignee of W. C. Stevens, Akron, Ohio, U. S. A.
246,087 Machine for making rubber tubes and sheets. W. P. Whitehouse, Gravesend, Kent, England.
246,116 Tire tube making apparatus. T. B. McLeroth (Tubes) Ltd., assignee of T. B. McLeroth, both of London, England.

Germany

Patents Issued, With Dates of Issue

407,091 (September 2, 1921). Device for making hollow rubber bodies. Paramount Rubber, Consolidated, Inc., Philadelphia, Pennsylvania, United States; represented by: Fr. Meffert and Dr. L. Sell, Berlin S. W. 68.
407,132 (March 20, 1924). Button-boring machine. Sylbe & Pondorf Maschinenbaugesellschaft, Schmölln, Thuringia.
407,204 (August 19, 1923). Rubber cutter. Fritz Kempter, Heimstrasse 10, Stuttgart.

Design Patents Issued, With Dates of Issue

890,054 (October 17, 1924). Vulcanizing apparatus. Chemische Fabrik Eugen Ganz G. m. b. H., Frankfurt-am-Main.
890,543 (October 13, 1924). Device for attaching tubes to rod extensions. Farbwerke vorm. Meister Lucius & Bruning, Hochst-am-Main.
890,928 (October 14, 1924). Mounting and brake device for rubber chains. August Röttger, Marienstrasse 8b., Elberfeld.
891,484 (November 11, 1924). Dipping apparatus for making rubber goods with recovery of the solvent. Continental Caoutchouc und Gutta Percha Compagnie, Hannover.

Process Patents

The United States

1,519,545 Method of making tires. M. A. Marquette, assignor to The Fisk Rubber Co., both of Chicopee Falls, Massachusetts.
1,519,564 Process for remolding hard rubber water-meter disks to precise dimensions. J. Thomson, Brooklyn, New York.
1,520,342 Methods of making strands for tire fabric. H. E. Grabau, Throggs Neck, assignor by mesne assignments to Multiple Cord Corporation, New York, both in state of New York.
1,521,657 Process for molding rubber articles. M. A. Teague, Elmhurst, New York, assignor to American Rubber Co., East Cambridge, Massachusetts.
1,521,879 Method of making inner tubes. J. E. Glickert, assignor to G. & J. Tire Co., both of Indianapolis, Indiana.
1,521,947 Process of compounding glue with rubber as a binder for tablets. W. L. Harris, assignor to the Lee Hardware Co., both of Salina, Kansas.
1,522,105 Process of vulcanizing rubber to fibrous material for producing combination heels. L. B. Conant, Cambridge, assignor to G. M. Conant, Bridgewater, both in Massachusetts.
1,522,767 Method of making a golf ball. G. C. Worthington, Elyria, Ohio.
1,522,797 Method of making a metallic tire bead. F. H. Beyea, assignor to J. R. Gammeter, both of Akron, Ohio.
1,522,798 Method of making a grommet or endless cable. F. H. Beyea, assignor to J. R. Gammeter, both of Akron, Ohio.

The Dominon of Canada

245,258 Method of forming annular rubber tubes. A. H. Frost and C. F. Fenlason Jr., both of Malone, New York, U. S. A.
245,535 Process of making a lettered mandrel for tire tubes. C. E. Lowe, East Cleveland, Ohio, U. S. A.
245,626 Method of forming rubber and fabric hot water bottles and the like. T. H. Roberts, Reigate, Surrey, assignee of one third interest of H. B. R. Clarke, Radlett, Hertford, and Herbert Skellon, Middleton, Lancaster, all in England.
246,141 Process of transforming finely divided carbon from a powder into a solid block. The Canadian Consolidated Rubber Co., Ltd., Montreal, Quebec, Canada, assignee of W. W. McMahan, New York, N. Y., U. S. A.

The United Kingdom

223,529 Method of waterproofing fabrics. Ioco Rubber and Waterproofing Co., Ltd., Netherton Works, Anniesland, Glasgow, Scotland. Assignees of M. W. Grinnell, New York, N. Y., U. S. A.
223,925 Method of making hollow rubber articles. G. Venosta, 29 Via Scarlatti, Milan, Italy.
223,934 Method of producing india rubber sheets with thread insertions. H. Debor, 55 Zielstattstrasse, Munchen, Germany.
224,032 Method of preparing dental rubber. C. Joannides, 36 Place de l'Ambassade d'lAngleterre, Constantinople.
224,062 Method of combining two worn pneumatic tire covers, one having sound beads and the other having a sound tread. M. Lamer, 27 Wycliffe Road, E. F. Meakins, 13 Adnitt Road, and C. J. Farr, 27 Wycliffe Road, all in Northampton.
224,117 Methods of connecting uppers to rubber soles. D. A. Cutler, Quincy, Massachusetts, U. S. A.
224,614 Method of knitting surgical elastic hosiery. J. H Haywood, Ltd., Castle Gate, and W. S. Keywood, 45 Portland Road, both in Nottingham.

Germany

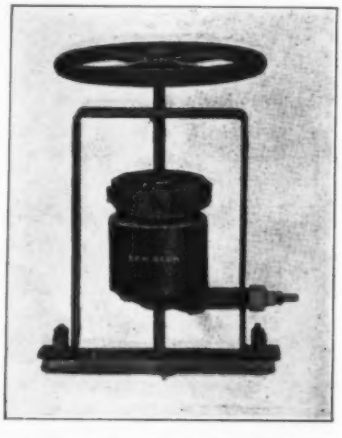
Patents Issued, With Dates of Issue

406,561 (April 4, 1923). Method of drying washed raw rubber. Dr. Hans Odenwald, Hannover-Limmer.
407,090 (September 2, 1921). Method of making ball-float valves. Paramount Rubber Consolidated, Inc., Philadelphia, Pennsylvania, U. S. A., represented by: F. Meffert and Dr. L. Sell, Berlin S. W. 68.
407,133 (March 29, 1922). Method of making a rubber fabric of threads lying side by side and rubber. Ernest Hopkinson, New York, N. Y., U. S. A., represented by: R. H. Korn, Berlin S. W. 11.
407,134 (June 12, 1921). Method of making marks on hollow bodies. Jacob Faber, Lütticherstrasse 23, Köln-am-Rhein.
407,529 (August 28, 1923). Method of attaching heels of rubber or similar elastic material. Leopold Van Roy, Brussels, Belgium; represented by: R. Schmehlik and C. Satlow, Berlin S. W. 61.

Machine for Branding Rental Batteries

The device here pictured is designed for branding service numbers on rental storage batteries in garages and battery service stations.

The machine consists of a brand in the form of a revolvable casting, bearing around its edge raised numerals from 1 to 0. The brand is fitted to a small gas heater over which it is supported. In operation the brand is heated to a dull red and the battery to be marked is pushed against it and the brand successively reindexed before applying each figure in the serial number.



Orum Rotary Branding Machine

The machine affords a quick and exact method of branding numbers on battery or similar boxes and is particularly valuable for keeping records of rental batteries.—S. R. M. Orum, 503 North Eleventh Street, Philadelphia, Pennsylvania.

The Editor's Book Table

Book Reviews

"THIRD YEAR BOOK OF THE INSTITUTION OF THE RUBBER Industry, 1924." Published at Faraday House, 10 Charing Cross Road, London, W. C. 2, England. Paper, 430 pages, 5½ by 8½ inches.

This report includes names of the officers of the organization and members of various committees; also a program of papers for the winter session, 1924-25; the president's report for the year ended August 31, 1924; and full accounts of each of the past year's meetings. The list of members shows 119 full members, 49 merchant, 367 associate, and 74 graduate members.

"SOUTH AMERICAN LEAF DISEASE OF PARA RUBBER." BY R. D. Rands, Bureau of Plant Industry. Department Bulletin No. 1286. Published by United States Department of Agriculture, Washington, D. C. Paper, illustrated, 18 pages, 6 by 9 inches.

Following the revival of interest in rubber cultivation in the American tropics, reviews of past attempts are being undertaken as well as studies of factors which may determine the success or failure of new enterprises. The bulletin under consideration summarizes in some detail the history and geographic distribution of the South American leaf disease in Trinidad and British and Dutch Guiana. Other sections deal with a description of this pest, and the possibilities of its control.

New Trade Publications

"RUBBER PRODUCTS FOR THE OIL INDUSTRY," A BOOKLET ISSUED by The Manhattan Rubber Manufacturing Co., Passaic, New Jersey, illustrates and describes the extensive line of special rubber goods manufactured by this company for the oil industry.

AN ILLUSTRATED CATALOG BY THE READING CHAIN AND BLOCK Corporation, Reading, Pennsylvania, is entitled "Reading C and and B Products" and contains data and specifications concerning electric hoists, traveling cranes, multiple gear and differential chain hoists, I-beam trolleys, etc.

AN ILLUSTRATED BULLETIN ENTITLED "DE LAVAL PUMPS AT DES Moines, Iowa," describes the pumping plant equipment installed for that city by the De Laval Steam Turbine Co., Trenton, New Jersey.

AN ILLUSTRATED CATALOG BY THE W. A. JONES FOUNDRY & Machine Co., 4401-4451 West Roosevelt Road, Chicago, Illinois, includes specifications regarding various kinds of gears as well as technical information concerning gear drives, gear speed reduction, etc.

An attractively printed and well illustrated publication entitled "The Franklin Process of Yarn Dyeing, an Outline of Its Contribution to the Textile Industry" is being sent out by the Franklin Process Co., Providence, Rhode Island. The equipment described is being used for coloring tire fabrics, fire hose, and automobile cloths, as well as many other materials.

THE TIRE RATE BOOK FOR OCTOBER, 1924, CONTAINS MANY FEAtures of interest, including two articles in connection with balloon tires, and another regarding methods for figuring mark-up. The Tire Rate Book is published by Edward Lyman Bill, Inc., 383 Madison avenue, New York, N. Y.

AN ILLUSTRATED BULLETIN, ENTITLED "PURE PARÁ," CONTAINS items of information regarding its publisher, the Dunlop Tire & Rubber Goods Co., Limited, Toronto, Ontario.

A BULLETIN ILLUSTRATED IN COLOR AND FEATURING SPECIAL OFfers for its "Rubber Goods Week" is being sent out by The Faultless Rubber Co., Ashland, Ohio.

Recent Articles Relating to Rubber

The Development of the Rubber Industry. A paper presented to meeting of Maritime Branch, Canadian Institute of Chemistry, August, 1924. History and growth of the rubber industry, reviewing developments in methods of coagulation and vulcanization. —R. K. McIntyre. *Canadian Chemistry and Metallurgy*, January, 1925, 8-11.

The Mixing of Rubber Compounds. A discussion of the factors affecting mixing mill operation.—R. B. Stringfield. *Chemical and Metallurgical Engineering*, January 12, 1925, 51-54. Illustrations, Graphs.

Electro Impregnation of Textiles with Rubber Latex. Simple dipping methods failed satisfactorily to close linen fabrics, but an electroendosmotic process was developed on a laboratory scale which gave good results.—Hans Fähnrich. *Faserforschung* 4, 124-8, 1924.

Durability of Latex Paper.—F. Kaye. *World's Paper Trade Review*, 82, 1282-6, 1924.

Safe Handling of Solvents.—Discusses the hazards of benzol, toluol, xylol, solvent naphtha, gasoline and carbontetrachloride and carbon bisulphide, their storage and danger of ignition by static electricity.—A. G. Smith. *Chemical Age*, November, 1924, 466-468.

Safety in Grinding Sulphur and Hard Rubber. Operating in an atmosphere containing less than 8.5 per cent oxygen with sulphur and less than 13 per cent oxygen with hard rubber will eliminate the danger of dust explosions.—H. W. Frevet (U. S. Bureau of Chemistry, Washington, D. C.). *Chemical and Metallurgical Engineering*, December 8, 1924, 894-896. Illustration, graphs.

Isoprene and Caoutchouc. VII. Homologues of Hydro-Caoutchouc.—H. Standinger and W. Widmer. *Helvetica Chimica Acta*, 7, 842-848, 1924.

Sizing Paper with Rubber Latex. The author confirms the remarkable results obtained in the primary products, but finds that the advantages gained are very largely lost in the course of a relatively short time by the oxidation or resinification of the finely divided caoutchouc in the paper.—C. Fenchel. *Papier-Fabrikant*, 22, 313-317, 1924.

A Crystalline Rubber and Hydro-Rubber.—Crystallographic investigation shows at least 3 kinds of crystals in 6 different forms, which are described and illustrated.—R. Pummerer and A. Koch. With X-ray investigations by R. Gross. *Annalen der Chemie*, 438, 294-313, 1924. Also *Gummi Zeitung*, November 14, 1924, 194.

The Employment of Schopper's Tension Tester for Measuring the Adhering Strength of Textile Strips and Rubber Layers.—Lother Hock. *Kolloid Zeitschrift*, 35, 47-8, 1924.

The Determination of Paraffin in Rubber. Five methods are discussed. By the Marten's method, detailed, less than 0.2 per cent paraffin can be detected.—J. Lagerquist. *Svensk Kemisk Tidskrift*, 36, 165-84, 1924.

The Direct Production of Rubber Sheets, Rubber Coated Fabrics, Threads and Molded Articles from Latex. An electrophoretic process.—Anonymous. *The India Rubber Journal*, January 3, 1925, 29-30. Illustrated.

The Counter-Pressure Machine in the Rubber Industry. Parts III and IV. Ernst Praetorius, *Gummi-Zeitung*, December 5, 1924, 296—300 and December 12, 1924, 328—329. Graphs and diagrams.

Holiday Greetings, Calendars, Souvenirs

Calendars

The Adamson Machine Co., Akron, Ohio, sends a large calendar in brown and gilt tones, and ornamented with a reproduction of one of the Lincoln statues.

Lockwood, Greene & Co., 24 Federal street, Boston, Massachusetts, has prepared a twelve-page calendar, each leaf containing a photographic representation of one of the company's recent constructions.

A calendar arranged with the interests of the dealer in mind has been presented by The B. F. Goodrich Rubber Co., Akron, Ohio. At the top of each of the twelve pages is an illustration in color representing the company's various individual designs in rubber footwear.

Other large calendars, each having some unusual feature, and printed in one or more colors, have been sent by the Northwestern Rubber Co., Litherland, Liverpool, England; Bemis Associates, Inc., Watertown, Massachusetts; Lavelle Rubber Co., 413-21 North Franklin street, Chicago, Illinois; Hartol Products Corporation, Newark, New Jersey; and Rubber Service Laboratories Co., Akron, Ohio.

Smaller calendars have been presented by the following organizations: the American Zinc Sales Co., 331 Madison avenue, New York, N. Y.; the United Shoe Machinery Corporation, Boston, Massachusetts; Hubbard Bros. & Co., 66 Beaver street, New York, N. Y.; and the New Jersey Rubber Co., Lambertville, New Jersey.

Large and attractive calendars have been sent by the Stedman Products Co., South Braintree, Massachusetts, and also by The Oak Rubber Co., Ravenna, Ohio.

Cards and Souvenirs

An attractive and useful memorandum pad, bound in leather, is the gift of The Standard Machinery Co., Mystic, Connecticut.

A large and handsome correspondence folder, also bound in leather, has been sent by The Banner Machine Co., Columbiana, Ohio.

John Royle & Sons, Paterson, New Jersey, have forwarded a useful little leather-bound notebook, containing some good maps, as well as certain handy items of information.

A very attractive billfolder, bound in soft brown leather, has been sent by H. Muehlstein & Co., Inc., 42nd street and Madison avenue, New York, N. Y.

A useful little knife, in a leather case, has been supplied by Rubber Service Laboratories, while De Mattia Bros., Inc., Garfield, New Jersey, sent a large pencil, attractively boxed.

A number of Christmas and New Year cards, expressing the good wishes of the donors, were sent by the following: T. C. Ashley & Co., Boston, Massachusetts; Wright Rubber Products Co., Racine, Wisconsin; Mitsui & Co., Limited, New York, N. Y.; Hartol Products Corporation, Newark, New Jersey; E. H. Clapp Rubber Co., Boston, Massachusetts; Reliance Rubber Co., Limited, London, England; Pequanoc Rubber Co., Butler, New Jersey; The Atlas Chemical Co., Waltham, Massachusetts; the Sin Kuo Min Press, Singapore, Straits Settlements; the Davol Rubber Co., Providence, Rhode Island; the Tillinghast Supply & Machine Co., Inc., Salem, Massachusetts; Frederick J. Maywald, Belleville, New Jersey; and William H. Scheel, 179 Water street, New York, N. Y.; Presas & Coto, Puentas Grandes, Havana, Cuba.

To all those who have so kindly remembered us we extend our hearty thanks and best wishes for their continued happiness and prosperity.

REPLETE WITH INFORMATION FOR RUBBER MANUFACTURERS—H. C. Pearson's "Crude Rubber and Compounding Ingredients."

Rubber Trade Inquiries

The inquiries that follow have already been answered; nevertheless they are of interest not only in showing the needs of the trade, but because of the possibility that additional information may be furnished by those who read them. The Editor is therefore glad to have those interested communicate with him.

(521) For a manufacturer of transparent rubber tubing as small as 1/16" I. D.
(522) List of manufacturers of machines for cutting grooves in solid tires.
(523) Addresses of manufacturers of white molded solid crutch tips.
(524) Manufacturer of syringe bulbs.
(525) Who handles "Sea-Plane" brand white rubber coat?
(526) What make of rubber flooring is spread on like cement?
(527) Names of manufacturers of rubber tile feature joints.
(528) Address of manufacturer of rubber cutting machine.
(529) Source of supply of cloth woven tubing and metal connections to faucet.
(530) Manufacturers of golf ball machinery.
(531) Silk finished material used in rubber reducing girdles.
(532) Manufacturers of nipping machines used in making nipples, balloons, etc.
(533) Representation in Holland for rubber flooring.
(534) List of manufacturers of toy balloons.
(535) Manufacturers of rubber cigarette cases, tobacco pouches, etc.
(536) Where fine powdered rubber may be obtained.
(537) Source of supply of Gum Damar, for cements.
(538) Addresses of manufacturers of tapping tools.
(539) Manufacturers of sponge rubber chair cushions.

Foreign Trade Opportunities

Address and information concerning the inquiries listed below will be supplied to our readers through the Foreign Trade Bureau of The India Rubber World, 25 West 45th Street, New York, N. Y.

NUMBER	COUNTRY AND COMMODITY	PURCHASE OR AGENCY
12,831	Italy—Machinery packing	Agency
12,832	Italy—Rubber belting	Agency
12,833	Italy—Rubber belting and packing	Agency
12,845	Sweden—Rubber reducing garments and specialties	Agency
12,875	Brazil—Rubber thread for elastic webbing	Agency
12,891	Japan—Rubber boots and overshoes and rubber-soled canvas shoes	Purchase
12,899	France—Automobile tires	Purchase and agency
12,924	Egypt—Druggists' rubber sundries	Agency
12,925	Norway—Rubber boots, shoes and overshoes	Agency
12,926	Sweden—Rubber dress shields, aprons, baby pants, bibs, crib sheeting, etc.	Agency
12,927	South Africa—Rainproof and waterproof garments	Agency
12,928	Lithuania—Rubber boots and shoes	Agency
13,009	Hungary—Tires and tubes	Purchase and agency
13,012	Egypt—Rubber-soled canvas shoes	Agency
13,025	Hungary—Rubber bands in various widths and colors and rubber soles and heels	Purchase and agency
13,037	Greece—Automobile tires, repair materials, vulcanizers, batteries, etc.	Agency
13,043	Argentina—Automobile accessories and parts	Agency
13,045	Hungary—Tires	Agency
13,059	Hungary—Rubber shoes	Purchase and agency
13,063	China—Rubber goods	Agency
13,096	Italy—Mechanical rubber goods	Agency
13,102	Italy—Belting, valves, packing and technical rubber goods	Agency
13,198	South Africa—Rubber balloons	Agency
13,199	England—Rubber composition belts, plain and ribbed, for men's wear	Purchase
13,200	Switzerland—Rubber heels and composition and crêpe rubber soles	Purchase and agency
13,201	Germany—4,000 pairs of rubber boots and shoes	Purchase
13,202	Germany—Automobile and truck tires	Agency
13,203	Germany—Crude rubber, 150 metric tons per month	Purchase
13,204	Egypt—Motorcycle tires	Agency
13,205	France—Rubber boots for seafaring and fishing	Purchase
13,215	Morocco—Automobile tires	Agency
13,219	Greece—Druggists' rubber sundries	Agency
13,220	Netherlands—Mineral rubber	Purchase
13,242	Netherlands—Rubber bands, garters, and other textile rubber articles	Purchase and agency

New Goods and Specialties

Eyeshade with Elastic Band for Tennis

A RECENT addition to the "Bike" elastic products is the tennis visor illustrated. The special feature is the broad elastic band which fits snugly around the head, not only holding the visor in place but holding the hair down and preventing it from falling over the face. The width of the band prevents it from marking the forehead.

Bike Tennis Visor Band

The visor is very flexible and the band is absorbent, protecting the eyes from sun glare and eliminating annoyance from perspiration.—Bike Web Manufacturing Co., 4115-4121 East Ravenswood avenue, Chicago, Illinois.

Par-Tee, a Device for Golf Practice

The Par-Tee comprises a hollow steel tube to be driven into the ground, in which tube are fastened a spiral spring and a piece of live rubber cord which is claimed to be good for a thousand shots and is replaceable in two minutes. On the end of the cord is a real golf ball resting on a rubber tee with a heavy rubber flange protecting all metal parts. When the ball is hit it flies out just far enough for one to judge the shot and then swings back in position, all teed, without the aid of a caddy.—The Golfers' Supply Co., Springfield, Illinois.

Permanent Rubber Brick Traffic Signs

The accompanying illustration shows a permanent "Stop" sign being incorporated in a street pavement in Akron, Ohio, by the Goodyear Tire & Rubber Co. for experimental purposes. Rubber bricks dipped in hot asphalt and locked together with grooves are used to make up orange block letters 32 inches high, set in a background of black. The whole section is laid flush with the pavement and measures 38 by 84 inches. A few inches beyond the word "Stop" may be seen a narrow strip of orange colored rubber bricks forming the boundary line for traffic. The bricks have a hard rubber base with a smooth surface, the colored blocks being of the same texture as the black, which are identical with those laid by the same company a year ago in front of one of the factory trucking entrances where heavy traffic furnished conclusive tests. The bricks are self-cleaning, so that the sign is always bright.

Laying the Rubber Brick Traffic Sign

"Locktite" Fabric Back Patch

The "Locktite" patch illustrated is said to be especially valuable in making a repair on a balloon tire casing, on account of its strength and elasticity. The patch is built up in several layers, and is applied with cement over the break on the inside of the casing. The second layer consists of a slightly smaller patch than the first and the third layer larger, so as to overlap the first, and so on, according to the size of the break. The heat of the road and the air pressure vulcanizes it to the casing.—Locktite Patch Co., 4196 Bellevue avenue, Detroit, Michigan.

The "Locktite" Patch Outfit

Another Rubber Reducer

The "Thinderella Boyshform"—The Boyshform Brassiere Co., 334 Fifth avenue, New York City—is made of non-porous Pará reducing rubber to exclude the air from the covered parts of the body and so induce perspiration. It is provided with detachable supporters.

Paynter Thief-Proof Cords

Molding the name and address of the owner so deeply into the tread or running surface of the tire that it cannot be removed without destroying the commercial value of the tire is the Paynter method of making a tire thief-proof, because a thief cannot dispose of a tire or a car equipped with tires having the name and address of the owner built into the tread. The method is simple. Each letter or numeral is a segment in itself and carries the conforming rubber that fits in to the shape desired. In the mold cavity there is a slot or channel in which the segments or mold type are placed and they are locked into rigid position with a locking device which enables the mold to be broken apart after a tire is vulcanized. The segments are all of the same width and interchangeable so that a set of any name or number is quickly assembled.—Paynter Corporation, Schaff Building, Philadelphia, Pennsylvania.

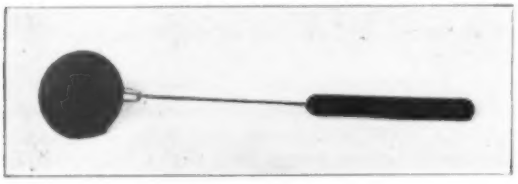
Rubber Darning Egg

The inventor of the rubber darning egg illustrated claims that the pliable rubber surface enables one to darn so rapidly and neatly that the task is no longer a drudgery but a pleasure. She is a woman and ought to know, though she admits that since she began making the "pussyfoot" darner other women's husbands get their socks darned as never before, but not hers. The rubber bulb is molded in one piece and fastens securely on a polished wood handle. Porter Brothers & Co., 106-108 Worth street, New York, N. Y., are agents for the United States and Canada.—B. M. Gingles, 733 Madison street, Waukesha, Wisconsin.

The "Pussyfoot" Darner

Rubber Patter for Massage

The massage patter illustrated consists of a circular disk of soft rubber having convex faces and a smoothly rounded edge, in which is embedded a socket flattened at one end to form a plate



Dorothy Gray Patter

which is molded and vulcanized in the disk and internally screw-threaded at its protruding end to receive a resilient rod on the end of which is a soft rubber handle.—The Forker Sales Service Corporation, 110 West 40th street, New York, N. Y.

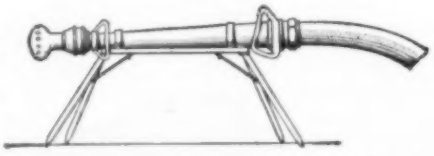
Step-In Skirt and Sanitary Apron Combined

The combination garment illustrated not only serves the purpose of two essential garments with the bulk of only one, but is shadow-proof as a petticoat and stays naturally in place as a sanitary apron. The back breadth is lined with rubberized material, light in weight and extending from the hip-line to the bottom of the skirt, insuring a neat and wrinkleless appearance however sheer the dress fabric. Materials of various textures and qualities are employed, according to whether the skirt is intended for ordinary everyday use or for special occasions. The back breadth is also made of pure Pará rubber in delicate shades of color. Beyerle Manufacturing Co., Inc., 160 Fifth avenue, New York, N. Y.

The Beyerle "Petticolette"

Water Screen Revolving Nozzle for Fighting Fires

A recently invented nozzle, the Sladden Water Screen, not only minimizes the danger in fire fighting but makes it possible for the firemen to fight fires in places where they cannot enter, by sending a stream of water to the ceiling, or through a hole in the floor, or against a wall where a direct stream could not be thrown. The nozzle revolves on ball bearings and is so constructed that when the water is turned on, either by hydrant or steamer pressure, a water screen from 40 to 50 feet in diameter and from 20 to 25 feet in height is formed, the stream flowing in a direct line, by means of an inverted cone, through 12 outlets. It is a portable screen and sprinkler combined and can be moved rapidly from one position to another. The water nozzle or head screws on to the regulation standpipe after the tip is removed.—American Nozzle Co., Inc., 233 Broadway, New York, N. Y.



The Sladden Water Screen Revolving Nozzle

Rubber Non-Skid Chain Links

The season has brought out an improvement in non-skid chains which eliminates the noise and vibration as well as the danger of skidding. The new idea embodies a cross link of rubber and fabric tread stock, shown in the illustration, molded to shape and with hooks vulcanized in the ends which catch into the circumferential chain lengths and hold the rubber links flat and snugly against the tire. For a 4-inch tire about twelve or fourteen of these sections are needed to encircle the tire.

The claim is made that not only do these links present a much neater appearance than the ordinary chain with metal links and do away entirely with the accompanying clatter but that they will outwear the metal chains.—Goodyear Tire & Rubber Co., Akron, Ohio.

Chain Link of Rubber

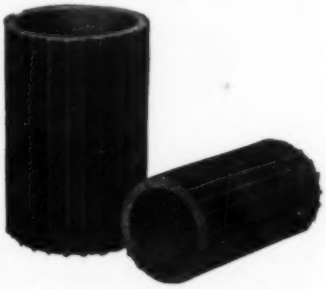
Rubberized Fabric Glove

A glove which is of particular value to automotive workers is practically waterproof all over. It is made of 10-ounce long staple cotton canvas, fleece-lined and with full gauntlet or wristlet. In rubberizing, the entire surface is first filled with a light rubber coating, after which heavier coats of tough, long-wearing rubber compound are applied, especially to fingers and palms. Four kinds are furnished: the heavy duty, the full coated, the coated hand, and the wristlet. In all styles the glove is entirely waterproof, soft, pliable and tough wearing. It is particularly adapted for automobile washing, polishing, motor repairing, changing tires, and general work around garage and repair shop.—The Rubberwear Glove Co., Akron, Ohio.

The Rubberwear Glove

All-Rubber Ford Radiator Connection

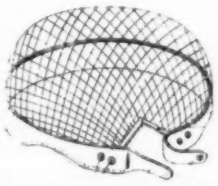
The Ekla radiator hose, illustrated, is made of a tough long-lived rubber compound which the manufacturers claim is proof against heat, oil, and anti-freeze solutions. There are no plies to crack, peel, and clog the cooling system and it is capable of withstanding the vibration on Ford cars and trucks. It is furnished in black and red and in sizes 2 by 4 inches and 1¾ by 2¼ inches, packed 50 or 100 to a case or 12 to a carton.—Eclat Rubber Co., Cuyahoga Falls, Ohio.



Ekla All-Rubber Radiator Hose

Device for Conforming the Hair

The vogue for boyish bobs for girls and plastered down sheik-like hair-dressing for their brothers has brought out various devices for obtaining and retaining the desired effect. The illustration shows a hair conformer with a broad band which will not mark the forehead, and with the elastic portion only toward the back and at the lower part, so that there is no unpleasant binding. There is an opening at the back and several snap fasteners by which the size may be adjusted. The device may be used for sports wear to protect the hair and to keep it off the face. The inventor is desirous of getting in touch with a manufacturer to handle production.—Joseph Danubio, East Weymouth, Massachusetts.

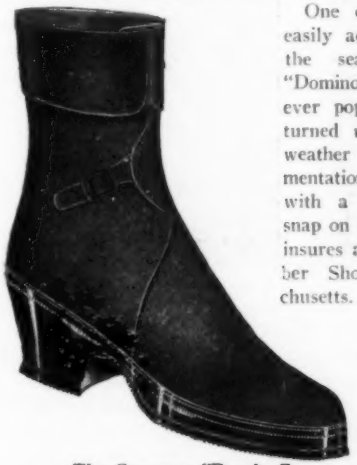


Hair Conformer and Protector

Rubber Used in a Breath-Measuring Device

A spirometer, or breath-measuring device used for testing the characteristics and possibilities of the voices of singers, is connected to a large rubber tube which leads in turn to a rubber mask strapped tightly across the singer's face. The other end of this tube discharges beneath a light, airtight box inverted in a tank of water. A 2-way flutter valve allows air to be breathed in from the room but compels it to pass out through the tube and into the inverted box, which gradually rises as it fills with air, and as it rises in the water a spot light focussed on a mirror attached to the box traces a line on a moving sheet of specially sensitized paper, from which it is possible to read off the exact amount of breath expelled each second in the singing of a specified tone. The inventors are Douglas Stanley, M.S., and H.H. Sheldon, Ph.D. of New York University, New York, N. Y.

Another Gaiter Offering of the Season



The Converse "Domino"

One of the neatest and most easily adjusted of the gaiters of the season is the Converse "Domino" illustrated. It has the ever popular cuff which may be turned up for service in stormy weather or folded down for ornamentation, as desired, and fastens with a single dome and socket snap on an adjustable strap, which insures a neat fit.—Converse Rubber Shoe Co., Malden, Massachusetts.

Miniature Demountables Just Like Dad's

The Buddy "L" tires which the Moline Pressed Steel Co., East Moline, Illinois, is using to make its miniature line of automobiles and trucks just exactly like those of the grown-ups employ the same tread design as may be found on the big models and carry the Firestone name. They are sturdy and snug-fitting and require no more effort to adjust than the youngster feels is necessary to impress the onlooker.

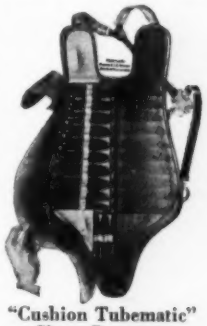
A WORLD-FAMOUS COUTURIER IN PARIS HAS DEVISED A DRESS FOR women's wear which is called the Dunlop, and employs a belt made up of bands of white rubber and Ciré ribbon, the intention being to suggest a miniature automobile tire.

New Sizes Added to the Michelin Line

The line of tires and tubes of the Michelin Tire Co., Milltown, New Jersey, has been augmented by several new sizes, so that its range of high pressure sizes extends from the 30 by 3 fabric to the 38 by 7 truck tire. One of the recent additions is a 32 by 6 heavy duty pneumatic which fits a 20-inch rim. Tubes for this type are furnished with either long or short straight valves for use with single or dual steel disk wheels. Seven sizes of balloon tires are also included, the latest additions being a 31 by 4.95 Comfort and a 33 by 6.20 Comfort for 21-inch wheels. A 40 by 8 tube for buses and trucks has also been added.

Pneumatic Chest Protector for Baseball

Another adaptation of rubber in sporting goods manufacture has resulted in a chest protector which requires no inflating or deflating, no packing or padding and yet is resilient and flexible. Natural tubular cushions made of a special quality of rubber and specially constructed, are extended horizontally over the upper portion and vertically over the lower or hinged portion. These contain air and are sealed at both ends to retain it. They can be folded, bent, or twisted without damage, and will not collapse should they be punctured. An adjustable leather back strap and truss elastic shoulder straps make it adaptable for any size and height. Cushion tubematic leg guards are also provided, with the cushions extended vertically in the section which protects the leg and horizontally in the section just below the knee.—Western Sporting Goods Manufacturing Co., 126 North Union avenue, Chicago, Illinois.



"Cushion Tubematic" Chest Protector

Loud Speaker Made Entirely of Hard Rubber

The manufacturer of the "Utah" Loud Speaker illustrated claims that it differs from others of similar shape and design in that it employs no aluminum or other metal either in the goose-neck or in the bell. Hard rubber is used throughout. This, it is claimed, insures unusual volume and quality of tone, free from rasping and distortions.

A phonograph connection is also provided which the manufacturer claims will give the same undistorted quality of reception which the loud speaker is guaranteed to give. It is nickel plated and stands on a broad base which rests on the turntable of the phonograph. It will fit any make of tone arm.—Utah Radio Products Co., 1427 South Michigan avenue, Chicago, Illinois.

The "Utah" Loud Speaker

THE LEWIS RUBBER SNUBBS, WHICH ORIGINATED IN YAKIMA, Washington, has been turned over to the Huntington Rubber Mills, Portland, Oregon, to manufacture and sell throughout the United States, the name being changed to The Lewis Shock Eraser, which is the registered trade mark.

The Obituary Record

Former President Pennsylvania Rubber Co.

COLONEL Charles M. DuPuy, son of Herbert DuPuy, president of the Pennsylvania Rubber Co., Jeannette, Pennsylvania, died suddenly of pneumonia, January 25, in the Presbyterian Hospital, Albuquerque, New Mexico. He contracted a severe cold during the week preceding his death, while en route to Arizona for his health.

Colonel DuPuy was prominent in business and social circles in Pittsburgh. Until recently, he was president of the Pennsylvania Rubber Company of America, which position he was forced to resign on September 1, 1924, because of ill health.

During the World War, Colonel DuPuy served with distinction with the American Expeditionary Forces, being elevated to the rank of Lieutenant-Colonel for his gallantry in the Argonne, in which he was severely gassed and wounded.

Besides his widow and his parents, he leaves one son, Charles M., Jr., and two daughters, Miss Eunice and Miss Dorothy DuPuy.

Long a Crude Rubber Broker

Frederick Stern, the well-known crude rubber broker, recently died suddenly of heart failure, January 2, 1925. Mr. Stern was born in Bohemia, February 5, 1857, and received a college education in Prague. He was one of the pioneers in the rubber broker-

Col. C. M. Du Puy

Fred Stern

Charles Loewenthal

Paul Bertuch

age business, having been engaged in it for the past forty years in Liverpool and London, England, and New York, N. Y. Some thirty years ago he made an extensive trip through the rubber growing regions of Brazil.

Mr. Stern had a host of friends in the rubber industry who will long remember his genial, kindly nature. He is survived by his widow, Mrs. Jennie Stern, and a daughter, Mrs. Lawrence Hayworth.

Former Crude Rubber Importer

Charles Loewenthal, head of the former crude rubber importing firm of Charles Loewenthal & Co., New York, N. Y., died suddenly of heart failure in Berlin, Germany, on January 14, 1925.

Born in the duchy of Mecklenburg-Schwerin, Germany, December 6, 1847, he was educated in the high school in Schwerin. Early in life he entered the employ of the rubber importing firm of Heilbut, Symons & Co., London, England. In 1868 he came to New York, N. Y., and joined his uncle, Edward Marcus, whose firm, Edward Marcus & Co., was the New York branch of Heilbut, Symons & Co. On the retirement of his uncle in 1881 he became head of the concern, under the firm name of Charles Loewenthal & Co.

In 1892 he retired from business and has since lived mostly abroad, enjoying good health until recently and visiting this country with his wife for a year in 1922.

He is survived by his widow, living in Berlin, Germany, a married son and daughter living abroad, and a married son living in New York.

Well-Known in Crude Rubber Industry

On January 21 Paul Bertuch, head of the rubber importing firm of Paul Bertuch & Co., 24 Stone street, New York, N. Y., died at his home in East Orange, New Jersey, after a short illness. Mr. Bertuch was born June 26, 1870, in Gotha, Germany, and receiving his education in one of the schools of that country, came to America in the year 1894.

His first business association was with a leather manufacturing concern, and later he became one of the firm of Hagemeyer & Brunn, commission merchants. Still later and originally under the name of Paul Bertuch, he established with Alexander Guttman the present organization, now carrying on business as Paul Bertuch & Co.

In 1904 Mr. Bertuch secured a seat on the Produce Exchange; he became a member of the Rubber Association of America, and was also for many years the chairman of the arbitration committee of the Rubber Trade Association of New York. Mr. Bertuch was highly respected in the rubber industry and his untimely passing will be regretted by his many friends.

General Manager Tire and Rim Association

George Louis Lavery, secretary and general manager of The Tire & Rim Association of America, Inc., Cleveland, Ohio, died on January 11 at the home of his daughter, in Elkins Park, Pennsylvania.

Mr. Lavery was born in Boston in 1856 and was educated at English High School and the Massachusetts Institute of Tech-

nology. He went to Chicago in 1885 as manager of the Chicago office of The Yale & Towne Manufacturing Co., and later resigned this position to start the American Postoffice Equipment Co., of which concern he was president until 1913. He went to Cleveland about ten years ago with the West Steel Castings Co., and was instrumental in organizing the Automotive Metal Wheel Association and was secretary of that organization as long as it was in existence.

Mr. Lavery was appointed secretary and general manager of The Tire & Rim Association of America, Inc., in 1922, which position he held at the time of his death. He was a member of The Union League Club of Chicago and of the Cleveland Athletic Club.

Dean of American Hard Rubber Trade

It is with deep regret that we record the passing of Fritz Achelis, president of the American Hard Rubber Co., who died after a brief illness at his home, 550 Park avenue, New York, N. Y., on December 23, 1924, in his eighty-second year.

Born in Brooklyn, New York, June 1, 1843, he had always been a resident of greater New York and had spent practically his entire business life in the making of hard rubber goods, rising from a modest beginning to head of the largest and best known concern engaged in hard rubber manufacture, and in his advanced years becoming recognized as the dean of the hard rubber trade.

His first business was Frederick Vietor & Achelis. In 1881 he became president of the India Rubber Comb Co., and in 1898, when several hard rubber companies were merged as the American Hard Rubber Co., he was elected president of the new corporation. From that time until one week before his death he was the guiding spirit of the company, and had been actively instrumental in the successful adaptation of hard rubber to many new uses, notably electrical insulation and radio. For forty-four years he was head of his company and had become one of the world's foremost authorities in hard rubber manufacture.

As generous and sympathetic in private life as he was keenly alert in business, Mr. Achelis gladly shared his financial success with others, and his unknown charitable donations were many. Encouraged by him, his late wife, Bertha F. Achelis, became very active in social welfare work in New York. With him she built and furnished the Lenox Hill Hospital Nurses Training School. And among the loges and chairs in that unique institution, The Town Hall, New York, are those dedicated to her memory.

In 1918, on the centenary of the birth of Conrad Poppenhusen, so well known as a pioneer in the manufacture of hard rubber goods in America, Mr. Achelis donated $30,000 to the Poppenhusen Institute, College Point, New York. The endowment was divided into three equal parts of $10,000 each, the first to constitute a memorial fund in the name of A. D. Schlesinger, formerly general superintendent of the American Hard Rubber Co. and treasurer of the Conrad Poppenhusen Association; the second to constitute a memorial fund in the name of William Jiel, and the third to provide necessary machinery and tool equipment. Only the income from the two memorial funds may be used, and one per cent of this is added to the principal annually.

Generous of his fortune in life, he was no less so in death. His will not only provides amply for his relatives, but includes charitable legacies aggregating nearly $200,000. Lenox Hill Hospital receives $100,000, and $10,000 each is bequeathed to the following: Lying-in Hospital; Wartburg Orphan Farm School; St. John's Guild; Y. M. C. A.; New York Association for Improving the Condition of the Poor; Charity Organization Society, and the Salvation Army. Legacies of $5,000 each were left to Flushing Hospital, Flushing, New York; Akron Hospital, Akron, Ohio; Monmouth County Hospital, Long Branch, New Jersey, and St. George's Church, Rumson, New Jersey.

In addition to being president and a director of the American Hard Rubber Co., Mr. Achelis was a director and trustee of the Central Savings Bank; a director of the Boker Cutlery & Hardware Co., and of H. Boker & Co., Inc. He was a member of the Rumson Country Club, the Sleepy Hollow Country Club and the Automobile Club of America.

He is survived by two daughters, Miss Elizabeth Achelis and Mrs. F. A. Ransome, of New York, N. Y., and one son, Frederick G. Achelis, of Greenwich, Connecticut, who is named executor in the will.

In the passing of Fritz Achelis the American rubber industry loses one of its long outstanding leaders, an energetic, progressive man of many interests and innumerable friends, an ornament to his branch of the trade; while New York loses an upright, beneficent if unostentatious citizen of whom it may well be proud.

Judicial Decisions

GLOBE OVERSEAS CORPORATION VS. UNITED STATES. United States General Appraisers, New York, October 16, 1924. Protest 10628-G against the assessment of duty by the collector of customs at the port of New York.

In a case regarding the duty on artificial sponges, made of rubber in fantastic shapes, such as a frog, swan, dog, etc., it was decided that such merchandise was dutiable at 25 per cent ad valorem under paragraph 1439, tariff act of 1922, as manufactures of india rubber not specially provided for, rather than as toys at 70 per cent ad valorem under paragraph 1414 of the same act.—*Treasury Decisions*, Volume 46, No. 17, page 25, case has been appealed.

Appraisers' Decisions

No. 47928.—PROTEST 991466 OF W. J. BYRNES & CO. (San Francisco.)

India rubber bladders for footballs and basket balls classified at 30 per cent ad valorem under paragraph 1402, tariff act of 1922, are claimed dutiable as manufactures of india rubber at 25 per cent under paragraph 1439. On the authority of Abstract 47781 the bladders in question were held dutiable as manufactures of india rubber under paragraph 1439.—*Treasury Decisions*, Volume 46, No. 18, page 22.

RUBBER TOYS IN CZECHOSLOVAKIA

There is no domestic manufacture of rubber toys in Czechoslovakia, according to the Department of Commerce, and the trade in such toys is entirely import. All kinds of rubber toys are in demand there, including rubber balls, rubber sponge figures of all kinds, balloons, a considerable quantity of diabolos and playballs of all sizes, styles, and decorations. Austria, led by Semperit, has practical monopoly of the rubber ball trade. Rubber dolls and animals are well formed, although there are no set standards. Rubber bugles and the smaller cheaper toys are sold in large quantities, but there is also a demand for larger figures, 6-inch, 7-inch, 8-inch and over.

CUBA AS MARKET FOR RUBBER HEELS

According to the Department of Commerce, Cuba affords a steady market for American rubber heels, such heels dominating the market and their use increasing from year to year. One importer gives 1,475,000 as his estimate of the number of rubber heels used yearly by the shoe industry, exclusive of rubber heels imported on shoes. It has been said that of the shoes manufactured in Cuba more than 25 per cent have rubber heels.

News of the American Rubber Trade

Rubber Industry Outlook

EVERY branch of the rubber industry entered the new year in high hope and expectation under the growing general confidence and revival of orders that closely followed the fall elections.

The showing made for the automobile industry at the Silver Jubilee of the National Automobile Show afforded encouragement, not to say enthusiasm, to the tire industry which in anticipation of the 1925 season has scheduled capacity production for the first half year. The balloon tire seems destined to make good handsomely and prove a boon to manufacturers and users.

Tire production for the coming season is estimated to increase from 10 to 15 per cent over that of 1924, reaching probably 55,000,000 in the year. Spring dating orders for tire replacements are reported to exceed the records of the past five years.

Influences that are reacting favorably on other branches of the rubber industry are the increase in building activity calling for insulated wire and rubber flooring. The placing of large orders for railway equipment including belting, hose of various sorts, packings, etc. is destined to aid the mechanical rubber goods factories.

Rubber footwear plants are in a favorable situation owing to the generally small stocks on dealers' shelves and the better than average demand for goods thus far this winter, due to increase in the spring months.

Dividends Declared

COMPANY	STOCK	RATE	PAYABLE	STOCK OF RECORD
Fisk Rubber Co.	1st Pfd.	$1.00	Feb. 2	Jan. 26
General Tire & Rubber Co.	Com.	$1.00 q.	Feb. 2	Jan. 20
Hood Rubber Co.	Com.	$1.00 q.	Mar. 31	Mar. 20
Hood Rubber Products Co.	Pfd.	1¾% q.	Mar. 1	Feb. 20
Miller Rubber Co.	8% Pfd.	2% q.	Mar. 1	Feb. 10
Miller Rubber Co.	8% Pfd.	2% extra	Mar. 1	Feb. 10
Seiberling Rubber Co.	Pfd.	$2.00	Jan. 15	Jan. 5
Seiberling Rubber Co.	Pfd.	$2.00	Feb. 16	Feb. 5
Seiberling Rubber Co.	Pfd.	$2.00	Mar. 15	Feb. 5
United States Rubber Co.	1st. Pfd.	2% q.	Jan. 31	Jan. 15

Akron Rubber Stock Quotations

Quotations of January 20 supplied by Otis & Co., Cleveland, Ohio.

	Last Sale	Bid	Asked
Firestone com.	99	97½	100
Firestone 1st pfd.	98	98	98½
Firestone 2nd pfd.	98	97	98
General com.	233	...	...
General pfd.	101	100	...
Goodrich com.	38½	...	...
Goodrich pfd.	88¾	...	...
Goodyear com., V. T. C.	29¼	27½	29
Goodyear pfd., V. T. C.	90½	...	...
Goodyear pr. pfd., V. T. C.	95¼	...	...
Miller com	110	...	111
Miller pfd.	104⅛	104⅛	104½
Star com.	8	...	...
Star pfd.	30	...	...
Swinehart com.	10	...	20
Victor com.	½	1¾	1⅞
Victor pfd.	...	...	...

New York Stock Exchange Quotations

January 20, 1925

	High	Low	Last
Ajax Rubber, com.	13	12¼	12½
Fisk Rubber, com	12⅝	12⅜	12¾
Fisk Rubber, 1st pfd. (1)	80	80	80
Goodrich, The B. F., Co., com.	44⅞	44⅛	44⅜
Goodyear Tire & Rubber, pfd.	90⅜	89⅛	89⅛
Goodyear Tire & Rubber, pr. pfd. (8)	106⅞	106⅞	106⅞
Kelly-Springfield Tire, com.	16¼	16	16
Keystone Tire & Rubber, com.	2	2	2
Lee Rubber & Tire, com.	13	13	13
United States Rubber, com.	43	42⅛	42½
United States Rubber, 1st pfd. (8)	95⅝	95⅛	95⅛

New Incorporations

1924

All-Weather Tire Service, December 20 (Rhode Island), $25,000 preferred stock and 10 shares of common stock no par value. Incorporators: George E. Varnum, 41 Hawthorne avenue, Eden Park; Americo V. Fazzi, 44 Eldridge street, Auburn, and Vincent C. Fazzi, 41 Stadden street, Providence, all of Rhode Island. Principal office, Providence, Rhode Island. To deal in and sell solid and pneumatic tires.

Amundsen Tire Co., Inc., December 31 (New York), 100 shares no par value. Incorporators: R. E. Allen, 400 Elmwood avenue; C. C. Jewett, 77 Bryant avenue and M. G. Owens, 183 Wallace avenue, all of Buffalo, N. Y. Principal office, Manhattan. To manufacture tires.

Buckhorn Tire Co., Inc., December 1 (Texas), $2,000. Frank Ducos, president and treasurer; L. M. Samuels, vice-president, and Frank Kaymore, secretary, all of San Antonio, Texas. Principal office, 221 North Flores street, San Antonio, Texas. To deal in tires and tubes.

Fisk Tire Fabric Co., The, November 29 (Massachusetts), 100 shares of common stock without par value. Leeds A. Wheeler, president, Edward C. Johnson, treasurer, and Cecil E. Whitney, all of 60 State street, Boston, Mass. Principal office, New Bedford, Mass. To carry on a general manufacturing and merchandising business, including the spinning and weaving of cotton, etc.

Gleasonite Products Co., The, December 31 (Massachusetts), $500,000, common stock, par value $10, and 2,000 shares of founders stock without par value. Frederick J. Gleason, president, 171 Auburn street, Cambridge; Max Brown, treasurer, 55 Audubon road, Boston; Rupert F. Giles, clerk, 46 Bay State avenue, Somerville, all of Mass. Principal office, Boston, Mass. To manufacture soles, heels, rubber products and waterproofing material of all kinds.

Siola Rubber Corp., December 31 (New York), 1,000 shares preferred stock, $100 par value and 1,000 shares common stock no par value. Incorporators: J. G. F. Squires, president, 310 W. 99th street, New York City; F. Persh, 1472 Wilkins avenue, Bronx, and A. Denner, 312 Schenectady avenue, Brooklyn, N. Y. Principal office, 1265 Broadway, New York City. To manufacture rubber goods.

1925

F. S. Bartlett & Son, Inc., January 2 (Massachusetts), $50,000, consisting of 250 shares of preferred stock, par value $100 each and 250 shares of common stock par value $100 each. Frank S. Bartlett, president, 42 Rangeley street, Winchester; George P. Wyer, treasurer and clerk, 29 Eastern avenue, Woburn, and Edward C. Bartlett, all of Massachusetts. Principal office, Woburn, Mass. To manufacture waterproofing cloth, and rubberized fabrics of every description.

Ceylon Rubber Trading Co., Inc., January 16 (New York), 400 shares no par value. Incorporators: A. Kluger, 518 W. 159th street; C. A. True and H. M. Hart, both of 27 Cedar street, all of New York City. Principal office, Manhattan. Dealing in rubber products.

Credit Tire Co., Inc., January 13 (New York), 100 shares no par value. Incorporators: S. Landau, 1945 Davidson avenue, Bronx; M. Getzler, 2332 Creston avenue, Bronx, and H. Mabel, 321 Broadway, New York City, all of New York. Principal office, Manhattan. To deal in tires.

Madison Tire & Rubber Co., Inc., January 3 (New York), $500. Incorporators: R. L. Ball, D. M. Roll, and M. Matthews, all of 813-814 Genesee Bldg., Buffalo, New York. Principal office, Buffalo, N. Y. To manufacture tires.

The Paracord Co., Inc., January 7 (New York), $100,000. Incorporators: C. F. Johnson, Jr., and H. E. Chrisfield, both of Johnson City, and J. W. Matthaei, 23 North street, Binghamton, all of N. Y. Principal office, Johnson City, N. Y. To manufacture rubber heels, soles, etc.

Sanitas Rubber Products Corp., January 6 (New York), 750 shares no par value. Incorporators: H. M. Hart; A. G. Thorne, both of 27 Cedar street, New York City and A. E. Schonberger, 2634 East 14th street, Brooklyn, N. Y. Principal office, Manhattan. To manufacture rubber products.

The Rubber Trade in the East and South

Rubber manufacturing activity has attained within recent months practically capacity output, and prospects are bright for continued good business. The gain of activity in nearly all lines of rubber goods production which began last fall has increased to capacity output in most of the important lines. The notable exception is automobile topping which has fallen off, due to the increase in the output of closed cars for which rubber topping is not required.

The prosperity of the automobile industry is such that an increase of 10 to 15 per cent in output is expected this year over last, indicating about 55,000,000 tires. Tire factories generally have scheduled high production for the first half of the present year.

The recent stormy weather and cold have resulted in brisk orders for rubber footwear. The mills are operating on full tickets for both winter and spring goods.

The larger manufacturers of leather shoes are equipping for the production of their rubber heel requirements. Between this tendency and the active competition for the repair trade by the large rubber manufacturers, profits in heels are being greatly reduced and the small manufacturer of heels is coming to straits.

Mechanical rubber goods mills are busy on standard goods, hose, belting, etc., to which some have recently added rubber flooring.

Insulated wire production is very active and increasing.

United States Rubber Appointments

After traveling continually for forty-five years in the interests of the United States Rubber Co., 1790 Broadway, New York, N. Y., W. H. Jones, southern selling agent, has tendered his resignation, and will be succeeded by Harold L. Goodwin, who has also served the organization in various capacities for the past fourteen years.

Walter Gussenhoven, manager of mechanical sales, has announced the appointment of C. A. Russ as assistant manager, mechanical merchandise department, under H. L. Williamson. Mr. Russ will devote his attention to the development of the manufacture and merchandising of new mechanical products.

Broadcasting Address of Rubber Association President

W. O. Rutherford, president of the Rubber Association of America and vice-president of The B. F. Goodrich Co., was heard over the radio by possibly more than a million persons on the occasion of opening the Goodrich Silvertown Cord Orchestra program on January 6. Mr. Rutherford briefly sketched the important part rubber has played in all forms of communication and transportation, and expressed his belief that prospects were encouraging for all industries in this present year, 1925.

"Manufacturers and retailers are keeping production in better balance with sales," he said. "The year 1924 saw the American farmer's purchasing power increased over three-quarters of a billion dollars, and for the first time in several years the price of farm products and that of manufactured goods are very nearly on a common level."

"I see America as the great money-lender of the world and this will help our foreign trade. Our plan of coordinating railroads with highway transportation systems will lead to a sound basic foundation for future prosperity. If all industry will now be careful not to over expand, each of us should prosper, for 1925 holds forth great possibilities."

Norwalk Tire Operating to Capacity

Since May 1, 1924, the plant of The Norwalk Tire & Rubber Co., Norwalk, Connecticut, has been running at capacity, while indications point to a continuance of production on this basis during the present year. At the present time the daily output amounts to 1,000 casings and 3,500 tubes.

R. H. Chatham has been appointed to the southwestern sales force and will cover western Texas, while J. F. Frisinger, now a member of the Chicago sales force, has as his territory parts of four of the midwestern states.

F. L. Lamson, secretary and treasurer of the Norwalk organization, recently returned from a trip through the Midwest and Southwest, where he reports business conditions as being very favorable.

Dunlop's Business Expanding

Executives of the Dunlop Tire & Rubber Co., Buffalo, New York, state that the spring dating business of the organization is now four times greater than that of last year, while the number of dealers shows an increase of 350 per cent over January of a year ago. Supporting the company's eleven main stocking points are warehouses in Detroit, Cincinnati, Pittsburgh, Portland (Maine), and St. Louis, while additional stocking points are soon to be established at Oklahoma City, Oklahoma; Richmond, Virginia; and Omaha, Nebraska. With manufacturing and distribution on a sounder footing, the entire industry is showing continued improvement.

Eastern and Southern Notes

The Derby Oxide & Colour Co., Ltd., Rugeley Staffs., England, have appointed L. H. Butcher Co., Inc., 251-255 Front street, New York, N. Y., as their exclusive American distributers of "Derby," indian, purple, venetian, turkey, tuscan, black and brown colors: yellow oxides of iron; Persian gult and Spanish oxides and genuine ivory black.

The Texas Carbon Industries, Inc., Breckenridge, Texas, manufacturer of carbon black, has appointed R. W. Greeff & Co., Inc., 78 Front street, New York, N. Y., as its sole selling agent. Additional equipment which will more than double the capacity of the Texas plant has been recently installed.

Dr. A. A. Somerville, vice-president and sales manager of R. T. Vanderbilt Co., 50 East Forty-second street, New York, N. Y., will sail February 7, on the "Berengaria," for a business trip of two months in Europe. He plans to visit the rubber goods manufacturing centers of England, Scotland, France, Holland, Belgium, Sweden and Italy; also to arrange for European sales representation, in England, France and Germany, of the Vanderbilt line of accelerators and rubber compounding ingredients.

MacNamara & Weber, Inc., crude rubber brokers, with offices at 136 Liberty street, New York, N. Y., have taken over the business of the MacNamara Service Corporation, and will continue the business as in the past.

E. H. Broadwell, vice-president of The Fisk Rubber Co., has resigned as a director of the Motor & Accessory Manufacturers Association. Mr. Broadwell for almost a decade has been a leader in the activities of the association, serving as a director from 1915 to 1921, and as president in 1921 and 1922. His resignation has resulted from the increase in his company's business, which demands his attention.

Edwards H. Childs, 59 Wall street, New York, N. Y., has been appointed receiver for Fred Stern & Co., Inc., crude rubber brokers, with offices at 277 Broadway, New York, N. Y., the concern having been alleged bankrupt.

The Siola Rubber Corporation announces the opening of its executive offices at 1265 Broadway, New York, N. Y. J. G. F. Squires is president.

John M. Hancock has been elected a director of the Kelly-Springfield Tire Co., 250 West 57th street, New York, N. Y.

At the recent meeting of the Mining and Metallurgical Society of America, Robert M. Catlin was elected president. Mr. Catlin is eastern manager of the mines of The New Jersey Zinc Co., 160 Front street, New York, N. Y.

The Casein Company of America, 15 Park Row, New York, N. Y., has acquired a substantial interest in the Erinoid Company of America, which will manufacture and sell casein plastics in this country. The new organization will be allied with Erinoid, Limited, London, England, a company which has been for many years engaged in this line of production.

Don E. Chapin & Co., Northport, Long Island, New York, jobbers of rubber products, have added to their lines a rubber sundry, novelty and mechanical sales division.

H. F. Van Valkenburgh, purchasing agent of the Dunlop Tire & Rubber Corporation of America, Buffalo, New York, has been elected president of the Buffalo Purchasing Agents' Association for the ensuing year.

The C. H. Poerstel Tire Co., 3721-23 Bigelow Boulevard, Pittsburgh, Pennsylvania, is the successor to The McNaull Tire Co.,

and is carrying a complete line of Firestone tires. C. H. Poerstel is president of the new organization.

Edelstone Bros. Fabric Mills, with offices and factory at Westbrook, Maine, succeeds the William W. Edelstone Fabric Co. in the manufacture of drop ply cord fabrics and chafer fabrics for tires. Officers of the first-mentioned organization are as follows: William W. Edelstone, president; and H. Edelstone, treasurer.

On January 1 of the present year a complete line of tire repair materials and accessories was added to the products now being manufactured by the DeLion Tire & Rubber Corporation, P. O. Box 101, Highlandtown Station, Baltimore, Maryland. Among the accessories is a tube repair kit containing patches and other useful articles. Earl E. Harrington is vice-president of the DeLion organization.

The spring meeting of The National Association of Cotton Manufacturers, 80 Federal street, Boston, Massachusetts, will be held this year on April 6, 7 and 8 at the New Willard Hotel, Washington, D. C.

The New Lexington Tire Co., 342 East Main street, Lexington, Kentucky, reports that the past year has been a most prosperous one, with each month showing an increase in business. The organization handles Seiberling "All-Tread" balloon and bus tires.

The Firestone Tire & Rubber Co., Akron, Ohio, has appointed W. G. Manley as district sales manager, in charge of the company's southern division, while A. W. Melton has been made manager of the new branch at San Antonio, Texas.

M. & A. Manufacturers' Association

Annual Meeting and Dinner

E. P. Chalfant, chairman of the board of the Gill Manufacturing Co., was elected president of the Motor & Accessory Manufacturers Association at the meeting of the board of directors held in New York, N. Y., on January 8, 1925. H. L. Horning was elected first vice-president; C. H. Flinterman, second vice-president; Eugene B. Clark, third vice-president; L. M. Wainwright, treasurer; J. M. McComb, secretary and assistant treasurer. The new board of directors comprises: M. B. Erickson, H. W. Chapin, E. P. Chalfant, C. E. Thompson, A. H. Altree and W. O. Rutherford.

The seventeenth annual banquet was held at the Hotel Astor, New York, N. Y., on January 7, 1925, when 800 members and guests enjoyed a dinner and entertainment that could not be surpassed in excellence and novelty. The banquet hall was cleverly set with scenes and costumed players representing the "Days of Our Forefathers." The diners were escorted to their places by Colonial maidens, and meanwhile there was orchestral music and quartette rendering of the songs of yesteryears. The Town Crier, Father Time, and the first Americans, Chief Buffalo and Min-ni-lo-wan, gave added realism to the picture of 1776. When all were seated the scene changed to 1925, and the menu was served, during which modern rag-time music, Hawaiian melodies and topical songs enlivened the prandial hour, that was thoroughly enjoyed by all.

When the dinner was over, the cigars were passed around and cigarettes distributed by veiled houris, and members and guests were given an entertainment both original and interesting. The development of the automobile industry was shown by the allegorical characters, Achievement, Capital, Man-power, Munition, Transportation, Loyalty, Cooperation and Service, represented by pretty girls who declaimed their respective achievements in the industry's growth. Then followed a vaudeville program that included singing, dancing and a beauty contest, the entertainment finally closing with the "Cheer Girls" from "Betty Lee," a popular Broadway musical comedy.

The Rubber Trade in New Jersey

Winter weather during the past month caused a slight reduction in the production of tires, but was a great asset to the plants manufacturing rubbers and other rubber footwear. There was also a noticeable decrease in the output of factories where radio parts are manufactured. Rumors of tire advances were abroad. One Trenton concern increased prices from 5 to 16 per cent and it is reported that other tire manufacturers may do likewise shortly. There has been a noted increase in the output of balloon tires. Mechanical lines are holding their own and manufacturers are running to capacity on belting and molded garden hose. The general rubber situation is considered favorable for a record production of rubber goods during 1925.

Thermoid Discontinues Tire Production

The Thermoid Rubber Co., Trenton, New Jersey, has discontinued the manufacture of tires and tubes and in the future will manufacture mechanical goods only. The company has recently added several new asbestos products to its line, and is very busy on belting, packing and hose.

Officials of the Thermoid company state that the discontinuance of making tires and tubes would in no way affect the many agencies scattered through the United States, which will be continued for the distribution of mechanical goods.

New Jersey Notes

The Globe Rubber Tire Manufacturing Co., Trenton, New Jersey, is gradually adding new branches, one being recently opened at Scottdale, Pennsylvania, with E. R. Sims in charge. The company reports no change in output and expects a good spring trade.

The Murray Rubber Co., Trenton, New Jersey, announces an increase of 5 to 16 per cent in prices of all tires, effective January 15. The company continues to operate at full capacity and is now producing a new black cord tire that is in good demand.

The Empire Tire & Rubber Corp. is busy in all mechanical departments and has many orders for belting and molded garden hose. The concern has recently placed a night force at work.

The Pierce-Roberts Rubber Co., Trenton, New Jersey, reports a good trade for druggists' sundries. The company makes about fifty various kinds of articles used by druggists, and has been running low on stock.

Members of the office force of the Thermoid Rubber Co., Trenton, New Jersey, held their annual dinner and Christmas entertainment at Hildebrecht's cafe at Trenton, followed by a theater party. After the show there was dancing at the cafe and the guests received gifts from a prettily decorated tree.

Edward C. Rose, Trenton, New Jersey, and J. Philip Bird, Plainfield, New Jersey, have been awarded $25,000 by Federal Judge William N. Runyon at Newark, New Jersey, for their services as receivers for the United & Globe Rubber Co. A fee of $17,500 was allowed to Bilder & Bilder, Newark, counsel for the receivers.

The Pocono Rubber Cloth Co., Trenton, New Jersey, has been organized for the purpose of making, purchasing, and selling rubber and all goods of which rubber is a component part.

Bruce Bedford, president of the Luzerne Rubber Co., Trenton, New Jersey, has been elected first vice-president of the Trenton Chamber of Commerce.

The American Tire Repair School has been established at 381 South Warren street, Trenton, New Jersey, by Paul Ortdur, who gained his knowledge of the rubber business with the National Tire Repair School in Philadelphia.

Edmund W. Craft, purchasing agent of the Thermoid Rubber Co., Trenton, New Jersey, has been appointed chairman of the shop meetings to be conducted in conjunction with the National Thrift Week Campaign at Trenton.

The Vulcanized Rubber Co., Morrisville, Pennsylvania, manufacturer of hard rubber goods exclusively, reports a falling off in some lines of radio parts. The other departments are busy.

H. K. Felton, manager of the Michelin Tire Co., Milltown, New Jersey, recently gave an interesting talk on "Rubber" before the members of the Kiwanis Club at Egg Harbor, New Jersey.

Alexander H. Clarke, Jr., has become associated with the Lambertville Rubber Co., Lambertville, New Jersey.

The Braender Rubber & Tire Co., Rutherford, New Jersey, has been reorganized, refinanced, and a new executive personnel elected. Paul Guenther is president; Russell G. Cory, vice-president; Lysander E. Wright, vice-president and general manager; Harold W. Osgood, third vice-president; Fred L. Braender, fourth vice-president; and Samuel Klein, secretary and treasurer. The above are also directors. Mr. Guenther is the founder of Paul Guenther, Inc., manufacturer of Onyx hosiery.

The Dural Rubber Corporation, Flemington, New Jersey, has elected the following board of directors: Colonel Arthur R. Foran, William C. Ehrenfeld, Firman R. Williamson, George K. Large and Russell W. Case, all of Trenton, New Jersey. Colonel Foran was made chairman of the board, while Mr. Ehrenfeld was re-elected president. Other officers are: Firman R. Williamson, vice-president; Russell W. Case, secretary and general sales manager; George K. Large, treasurer; Robert Chris, assistant secretary and assistant treasurer. Mr. Case, secretary and sales manager, was formerly with the Hamilton Rubber Manufacturing Co. The company will manufacture radiator hose, milking machine parts and motor accessories. A new product of the factory is a perforated bath sponge, constructed like an envelope, into which a cake of soap can be placed.

John T. Crowley, vice-president and general manager of the Servus Rubber Co., Rock Island, Illinois, recently visited his brother, William Crowley, factory superintendent of the Lambertville Rubber Co., Lambertville, New Jersey.

"The Jerseyite First Quarterly Luncheon," of the New Jersey salesmen of the Michelin Tire Co., Milltown, New Jersey, was held at the Hotel Klein, New Brunswick, New Jersey, on January 17. The Jersey salesmen, under the supervision of H. K. Felton, district manager, have set up a slogan this year of "Ten Jersey Salesmen Top Notchers." The affair was a reception to the new sales officials of the company, Messrs. DeMonne, Osborne and Voorhees.

The Rubber Trade in Rhode Island

Colonel Colt's Estate

There was more than usual interest in the appraisal of the estate of the late Colonel Samuel P. Colt of Bristol, that was filed in New York the last day of the old year. It shows that he left a total estate of $5,198,966, of which $4,516,404 was in personal property. His New York estate amounted to $735,056, which included his New York home at 17 East Forty-fourth street, valued at $100,000; a country place, Lynwood, at Rye, worth $50,000, and personal property valued at $27,996.

Among the most valuable securities owned by Colonel Colt were: 4,889 shares of Industrial Trust Co., Providence, $1,110,625; 7,500 shares of Bristol and Warren Water Works, $262,500; 5,000 shares of Providence Tribune, $280,000; 2,500 shares of Pawtucket Times, $274,300; 16,609 shares of United States Rubber common, $821,107, and 100 shares of first preferred, $8,975. The New York property also included 588 shares of the United Timber Co., valued at $94,800 and $30,000 deposited with the stock exchange firm of H. L. Horton & Co. He also owned $200,000 worth of other stocks taxable in New York including 20 shares of common stock of the New York Times, which is valued in the appraisal at $14,617 and 80 shares of preferred, estimated at $8,000.

The public bequests included $50,000 to Brown University at Providence and $1,000 to the Massachusetts Institute of Technology, while the town of Bristol got $52,500 and $17,500 was left to St. Michael's Episcopal Church at Bristol. The following organizations of Bristol got $8,750 each: Home for Destitute Children, Home for Aged Women, Benjamin Church Home, and the Juniper Hill Cemetery Association. The towns of Warren and Barrington received $8,750 each.

Activities of National India Rubber Co.

The National India Rubber Co.'s plant at Bristol resumed operations, following the Christmas holidays' shutdown, on the same schedule that has been in force for some time, but with a slightly increased number of operatives. There is better feeling and a more consistent optimism concerning the future than has prevailed in many months.

Bristol's welcome to the New Year was one of merrymaking on the part of more than 200 employes of the National India Rubber Co., including superintendents, foremen, and clerks, who assembled the "night before" at the Hotel Belvedere to greet the birth of 1925. At midnight the whistle of the factory was blown, after which the party joined in singing "Auld Lang Syne," "The Doxology," and "America," as they were played on the chimes of old Trinity Church.

A complimentary dinner was served Friday evening, January 9, at the Hotel Belvedere in honor of Floriman Hathaway of the wire sales department of the National India Rubber Co., previous to his leaving for Boston, where he has accepted a position. Covers were laid for a dozen, Clarence W. Bigbee officiating as toastmaster.

Rhode Island Notes

Superintendent William Hinchcliffe of the Carolina Co., Carolina Village, Rhode Island, announced that day and night shifts had been started in the carding and spinning rooms in order to keep up with orders for head linings of especially prepared fabric for the Ford Motor Co. of Detroit. The Carolina Co. early in the month also began taking on additional help and will continue to increase its working force as it is necessary. The outlook for the ensuing year is said to be particularly promising.

The Ninigret Mill, Westerly, Rhode Island, employing about 80 operatives and conducted by the Fisk Tire Co., Springfield, Massachusetts, is to be removed some time this year to New Bedford, Massachusetts, where the Fisk company is already operating mills in the production of fabric for tires similar to that being turned out at the Ninigret plant.

The DeWolf Inn, Bristol, Rhode Island, has been purchased from the United States Rubber Co. by Charles B. Rockwell.

Richard Richards, Pawtucket, Rhode Island, has taken up the duties of his new position with the Fisk Rubber Co., at New Bedford, Massachusetts.

Walter Eaton, a well known cost accountant for 16 years in the employ of the United States Rubber Co., Providence, died at his home in East Providence, January 16, in his 47th year. He was born in England and leaves a widow, two daughters, and a son. His mother, three sisters, and a brother survive in England.

MECHANICAL RUBBER GOODS EXPORTS

Exports from the United States of mechanical rubber goods reached their height in April, 1924, with values for rubber belting at $212,174; hose, $166,097; and packing, $83,561. Leading customers for these goods during the month in question were: British South Africa, taking rubber belting valued at $32,509, hose, $26,542, and packing $3,346; England, buying rubber belting at $28,971, hose $23,216, and packing $7,065. Other purchasers included: Japan, with rubber belting at $23,958, hose $16,354, and packing $13,272; Mexico, taking belting valued at $15,856, hose $16,653, and packing $6,492; Canada, with belting $11,184, hose $8,632, and packing $16,352; and Chile with belting $21,739, hose $3,501, and packing $568.

The Rubber Trade in Massachusetts

The steady gain in employment and output at most Massachusetts rubber plants continues, with good prospects generally reported for the ensuing year. A succession of snowstorms has brought large retail sales of heavy rubber footwear and repeat orders to manufacturers, already operating practically at capacity. Likewise it has curtailed tire sales somewhat. Tire orders for spring delivery are reported very large despite the current belief that the automobile saturation point has been reached. Balloon tires are to be regular equipment on most 1925 cars, and the smaller tire manufacturers are beginning to make them.

Mechanical rubber goods plants are busy, likewise flooring, heel, and hard rubber plants. Druggists' sundries are seasonally active, and weatherproof clothing demand has been fair in recent months. Building operations, favored by mild weather and little snow until within a few weeks, are still extensive for this time of the year, and insulated wire demand continues large.

Fisk Rubber Co. Prospering

Net sales of The Fisk Rubber Co., Chicopee Falls, Massachusetts, for the fiscal year ended October 31, 1924, amounted to $52,946,531, and showed net profits of about $2,650,000, equal to $14 a share on the first preferred 7 per cent cumulative stock. Unit sales increased approximately 10 per cent, whereas the value of such sales increased approximately 5 per cent, due to two price reductions during the year. On October 31, 1924, the company was entirely free of bank loans, and profit and loss surplus was approximately $7,500,000 compared with bank borrowings of $1,500,000 and a surplus of $5,612,107 at the close of the last fiscal period. Accumulated dividends on preferred now total 24½ per cent and the directors are now considering resumption of payments on this issue and possible installments on account of dividends in the near future. Orders on hand for spring delivery are the largest in the history of the company and the prospects for the coming year are satisfactory.

General Tire in New Boston Home

The Dayton Tire Co., Boston retailer of General cord tires, now occupies the building at the junction of Commonwealth avenue and Beacon street, Boston, which was specially built for the tire business. Extensive rearrangements have been made, however, to improve service facilities, a completely equipped vulcanizing shop for repairing all sizes of tires and tubes being a feature.

The Dayton Tire Co. was incorporated in 1913 by E. C. Newcomb, president and treasurer, and Joseph M. Everett, secretary, and began business in a small store at 589 Boylston street. In 1917 the firm moved to 700 Beacon street, where it has since been located until increasing business made larger quarters necessary.

Massachusetts Notes

H. C. Hanson has been appointed assistant to E. H. Broadwell, vice-president of the Fisk Rubber Co., Chicopee Falls, Massachusetts. Mr. Hanson comes from the Republic Rubber Co. and was formerly with The B. F. Goodrich Co. His work will be confined largely to manufacturers' sales.

The daily output of The Converse Rubber Shoe Co., Malden, Massachusetts, now includes 13,000 pairs of rubber shoes, while the tire production is represented by 200 casings and 1,500 inner tubes.

Harry R. Karnaghan has been appointed manager of the Boston branch maintained by The Seiberling Rubber Co., Akron, Ohio.

The Atlas Automobile Tire Co., Boston, Massachusetts, is the direct factory distributer for Racine tires. The firm now occupies one of the choicest corner locations in the tire district, at 60 Eliot street. Charles I. Feigen is president and general manager of the company, and J. Edward Maloney is treasurer.

The Fisk Tire Fabric Co., in addition to its textile mills at Pawtucket and Westerly, Rhode Island, has acquired an interest in the Rotch mills at New Bedford, Massachusetts, formerly owned by the American Cotton Fabrics Corporation, and in part to be used for the manufacture of tire fabric for the Fisk company. R. B. McGaw is president of the Fisk Tire Fabric Co. and treasurer of The Fisk Rubber Co. The entire offering of $2,000,000 Fisk Tire Fabric Co. first mortgage ten-year 6½ per cent sinking fund gold bonds has been sold.

The board of directors of The Boston Chamber of Commerce has voted to give its moral support to the proposed Rubber and Tropical Products Exposition to be held in Boston, October 10 to 17, provided that the rubber industry itself takes sufficient interest in the proposed undertaking to make it seem likely to prove a success. Orra L. Stone, general manager of Associated Industries of Massachusetts, favors similar indorsement.

George L. Finch, with offices at 141 Milk street, Boston, Massachusetts, has been appointed eastern sales representative of the Allen Machine Co., Erie, Pennsylvania.

The Rubber Trade in Ohio

Optimistic statements about the rubber industry in 1925 are beginning to be realized by increased activities in Ohio factories since the first of the year. While this condition is more marked in some plants than others, the industry as a whole is preparing for a big year. The rubber industry is now in a more stabilized condition, both as to manufacturing and distribution methods and selling prices, than it has been for many years. A better feeling exists among the large manufacturers, with absence of the friction which has precipitated disastrous price cutting wars in the past. Great progress was made in effecting economies and reducing overhead last year, and even larger savings will be effected this year through new labor saving equipment and more efficiency in manufacturing methods.

Although orders for original equipment are not far in excess of last year, sales managers say increased business is coming in from dealers all over the country. The replacement tire business is expected to be larger in view of the record breaking sales of automobiles in 1923, the full effect of which should be felt in 1925, as new tires are not bought, as a rule, until the car has been run two years. Tire production in the Akron district has been running on an even keel since January 1, with an upward trend prevailing. Daily output has been around 100,000 tires a day, but several plants will increase production tickets from 15 to 25 per cent by February 1. Manufacturers are preparing to put into effect the largest schedules in the past five years, indicating that tire production during the first half of this year will be at record breaking levels.

Manufacturers of footwear and rubber heels are enjoying what is fast approaching a boom. Owing to an unprecedented volume of orders from retailers throughout the United States, an actual shortage of footwear has been created. This situation is bound to react to the benefit of the manufacturers.

Only experienced workers are being hired by the factories devoted exclusively to tire manufacturing. The demand for tires does not warrant taking on large numbers of new men, and working forces will be gradually built by employing a few of the best who apply for work every day. There has been somewhat of a surplus of labor in Akron during the past few weeks, due to the large influx of workers here from the South, according to employment managers. Labor is being hired at some factories now at 35 cents an hour, compared with 60 and 70 cents an hour paid a few years ago for the same kind of work. Skilled piece workers do not make more than an average of $5 and $6 a day. Furthermore, labor is doing nearly three times as much more work than in the high wage period. Today is a time of efficiency and economy in the rubber industry.

Firestone's Twenty-Fifth Anniversary

Plans are under way to celebrate the twenty-fifth anniversary of the Firestone Tire & Rubber Co., founded by Harvey S. Firestone, August 2, 1900, for the purpose of making carriage tires. A year later Mr. Firestone bought an old foundry on Sweitzer avenue for $4,500, installed some second hand rubber machinery, and actually started the production of carriage tires in the summer of 1902. The plant was 75 by 100 feet, and the force numbered twelve men in the factory and two in the office. Within a few years four stories were added to the old building, which was enlarged again and again.

Step by step, as the demand for automobile tires increased, the Firestone company kept ahead of the times. The clincher tire was developed, Firestone invented and started manufacturing a demountable rim, the solid truck tire was produced, and the straight-side casing gained headway. In response to a growing need for more quarters, Plant 1 was built in 1912. Plant 2 was constructed in 1917. Since then a plant has been built in Canada, and a new steel products building has been constructed. In fourteen years the business has increased twelvefold. In 1910 sales amounted to $7,500,000, compared with $87,000,000 in 1924.

Activities of General Tire & Rubber Co.

At the recent annual meeting of the General Tire & Rubber Co., Akron, Ohio, most favorable reports were rendered concerning the organization's activities of the past year, while indications all point to a continuance of prosperity during the present year. The president's report showed that sales in 1924 totaled $13,152,000, or an increase of 50 per cent, while profits at $1,500,000 represented an advance of 25 per cent. During the past year the factory was enlarged by three new constructions, and three more additions which will increase the plant capacity by 50 per cent are now under way.

The following executives were reelected: M. O'Neil, chairman of the board; William O'Neil, president and general manager; W. E. Fouse and C. J. Jahant, vice-presidents; T. F. O'Neil, secretary; Charles Herberich, treasurer; and W. J. Cahill, assistant secretary.

Goodrich Increases Footwear Production

Production of rubber boots and shoes at the plant of The B. F. Goodrich Co. is now between 30,000 and 35,000 pairs daily, compared with 25,000 pairs a month ago. No large stocks of footwear were carried over from last year, and when an unexpected heavy volume of orders developed in midwinter a shortage was found to exist. A slight advance in footwear prices has enabled manufacturers to make a better profit on this line. Footwear represents nearly 25 per cent of the Goodrich company's total production.

Goodrich has been hiring men steadily since the first of the year for the footwear department, and 500 more workers will be employed this month. Special schools in footwear making have been started to train the new employes. The working hours have also been increased, and additional machinery is being installed to increase the output.

Greater Tire Production Necessary?

According to statistics prepared by The Miller Rubber Co., Akron, Ohio, tire replacements during the years 1921 to 1924, inclusive, were at the almost constant rate of 2.74 tires per car per year as compared with 4.53 tires per car per year in 1916. The improvements in tire manufacture have been responsible for keeping tire replacements at this low level, and the introduction of balloon tires will not change this ratio.

Miller engineers state that, notwithstanding fluctuating automobile production, the number of cars in operation is increasing year by year. It follows that, since replacements are on almost an even rate per car per year, to meet this demand greater tire production is necessary.

H. K. Raymond Resigns

The B. F. Goodrich Co., Akron, Ohio, announces that H. K. Raymond, vice-president in charge of production, has resigned, although he will still remain a member of the board of directors. Mr. Raymond has been serving the Goodrich company in various capacities for the past thirty years, having become recognized as an expert in designing pneumatic tires and also in production methods. He was elected to the board of directors in 1916 and made vice-president in charge of production in 1918. Following Mr. Raymond's resignation, B. G. Work has assumed the position and duties of acting works manager.

Stanley W. Harris

Ohio Notes

Stanley W. Harris, president and general manager of The Akron Rubber Mold & Machine Co., Akron, Ohio, sailed December 27 from New York on the Olympic en route to Africa, where he will hunt big game. Mr. Harris is accompanied by W. E. Wright, also of Akron, who has made similar trips in previous years and is known as a hunter and naturalist. Planning to be gone five or six months, the party has provided an abundance of equipment, an interesting part of the outfit being a modern and compact type of motion-picture camera.

Anticipating a year of increased tire production, The Miller Rubber Co., Akron, Ohio, is enlarging its mill room factory building by the construction of three more stories, at a cost of $120,000. By raising the present four-story building to seven stories, an additional factory space of 70,000 square feet will be provided for storage purposes and tire building operations.

George Fishback, for approximately two years manager of publicity for the Miller Rubber Co., Akron, Ohio, and prior to that associated with the advertising work of the Goodyear organization, is now secretary of Eddy & Clark, Inc., a sales and advertising concern also located in Akron.

On the fifteenth of January the plant of the Seiberling Rubber Co., at Barberton, Ohio, began operating under a 50 per cent increase in capacity, while the New Castle plant will begin running some time during the present year.

An increase of production for 1925 to 2,100 tires a day and approximately the same number of tubes is announced by the Pharis Tire & Rubber Co., Newark, Ohio. George C. Van Veen, formerly associated with the Mason Tire & Rubber Co., will now as salesman cover the western and northwestern territory for the Pharis organization.

H. C. McDermott, formerly in charge of the branch maintained at Harrisburg, Pennsylvania, by the Firestone Tire & Rubber Co., Akron, Ohio, is now branch manager at Columbus, Ohio.

The truck tire sales department of the Goodyear Tire & Rubber Co., Akron, Ohio, announces that J. E. Mayl, formerly connected with the Firestone organization, has been placed in charge of the first mentioned company's bus transportation division. Mr. Mayl succeeds C. L. Diers, who for almost fifteen years has been serving the Goodyear organization in various capacities.

E. C. Lowney, formerly connected with the Firestone organization, has now joined forces with the India Tire & Rubber Co., Akron, Ohio, being associated in his new duties with the India company's treasurer, Mr. Searles.

W. J. Kirkpatrick, for over fourteen years associated with A. Schrader's Son, Inc., Brooklyn, New York, has been appointed manager of the company's branch office at Akron, Ohio, succeeding F. F. Myers.

The Goodyear Tire & Rubber Co., Akron, Ohio, began broadcasting January 15 from Station WJAX, Cleveland, Ohio, which it purchased from the Union Trust Co. The new station, known as WEAR, will later be moved to Akron, it is stated.

The Miller Rubber Co., Akron, Ohio, manufactures approximately 1,000 rubber reducing girdles a day. Large orders have been received, it is stated, from the leading corset manufacturers in the country.

Completion of the RS-1, second largest dirigible in America, is announced by the Goodyear Tire & Rubber Co., Akron, Ohio. It will be used by the army air service at Scott Field, Illinois. Goodyear is now building six smaller dirigibles for the United States Army, and the Goodyear-Zeppelin Corporation is designing a huge Zeppelin twice the size of the Shenandoah.

The Biltwell Tire & Rubber Co., Barberton, Ohio, organized about eight months ago, is now operating with three shifts working twenty-four hours a day. The Biltwell company took over the old plant of the Northern Rubber Co.

The Republic Rubber Co's plant at Canton, Ohio, formerly the Knight Tire & Rubber Co., is reported for sale. The plant is suitable for the manufacture of tires, tubes or rubber specialties.

The Domestic Rubber Co., Barberton, Ohio, formerly the Vultex Rubber Co., will begin to manufacture rubber household sundries early this spring.

The Rubber Trade in the Midwest

St. Louis Rubber Cement Co. Expands

A two-story brick building for the manufacture of friction and rubber tape as well as patching gum has been recently erected by the St. Louis Rubber Cement Co., 3951-53 Laclede avenue, St. Louis, Missouri. One of the earlier factory constructions is being used for the production of automobile accessories, specialties for boot and shoe manufacturers, artificial limbs, etc., while the second building has been arranged for coating cloth processes and waterproofing.

For 75 years without a break this organization, now under the management of William Ogden Hadley, has continued to manufacture the lines of goods first instituted in 1850 by William Hadley. The active members of the present company represent the third generation of the Hadley family.

Banner Year for Standard Four

The Standard Four Tire Co., Keokuk, Iowa, reports that the past year has been a banner one for sales of casings and tubes. In anticipation of continued good business this organization has installed additional equipment for the purpose of increasing its tire manufacturing capacity by 35 per cent, while the production of tubes is to be doubled. Plans for early spring include a daily output of 2,000 tires, and from 5,500 to 6,000 tubes. A. E. Verner is general sales manager.

International Shoe Co. to Manufacture Rubber Heels

The building at Hannibal, Missouri, formerly occupied by the Hannibal Rubber Co., has been purchased by the International Shoe Co., 1501-1509 Washington avenue, St. Louis, Missouri. The latter organization is planning to equip the property for the manufacture of rubber heels. F. O. Rand is president of the International Shoe Co.

Midwestern Notes

The past year has been a most satisfactory one for the Kansas City Rubber & Belting Co., 712 Delaware street, Kansas City, Missouri, while prospects for the present year are also very encouraging. This organization, which manufactures rubber, cotton and balata belting, hose packing and valves, mats and matting, etc., is headed by the following executives: R. F. Ketchum, president; M. A. Ketchum, vice-president; and P. F. Bond, secretary and treasurer.

A three-story addition to the plant of the Servus Rubber Co., Rock Island, Illinois, which when completed will cost approximately $150,000, is now under construction. The purpose of the addition is to enable the company to manufacture rubber footwear on a larger scale than formerly. Judson J. Adams is president.

The Airubber Corporation, 500-510 North Dearborn street, Chicago, Illinois, capitalized at $200,000, has been organized for the purpose of manufacturing rubber fabric goods under patented processes. Officers of the new concern include: J. L. Kraft, president; W. A. Withers, vice-president and general manager; Erwin P. Snyder, secretary; and C. J. Howel, treasurer.

Although still holding his interests in the York Tire Shops at Crystal Lake and Marengo, Illinois, J. D. Felton has also taken over the business of Elgin Tire Sales, 27 North Grove avenue, Elgin, Illinois. The last-mentioned organization is a distributer of Horseshoe tires.

The Century Rubber Co., 1106 Harmon Place, Minneapolis, Minnesota, is a representative of the Century Rubber Works, Chicago, Illinois, and is carrying a considerable stock of the latter company's merchandise for distribution throughout Minnesota, North Dakota, and South Dakota.

An excellent business in balloon tires is reported by the Shockley Tire Co., 312-14 East McDaniel street, Springfield, Missouri, a concern established only three years ago. Firestone casings exclusively are being handled by this distributing organization, which is headed by L. M. Shockley.

The Warren-Featherbone Co., Three Oaks, Michigan, has begun the manufacture of belting, automobile fan belts and radiator hose.

The L. F. Joliat Co., 68 Brady street, Detroit, Michigan, has been appointed exclusive distributer of Fisk truck tires in the city of Detroit. The Fisk organization maintains a branch in the city for the handling of pneumatic tires.

The Shelby Tire & Accessory Co., Shelbyville, Indiana, recently began to operate as a distributing organization, with L. G. Ash as manager.

R. T. Donohue has been appointed manager of the branch at Davenport, Iowa, maintained by The Fisk Tire Co., Inc., Chicopee Falls, Massachusetts.

The Higgins Tire Shop, 306 North Main street, Blackwell, Oklahoma, is carrying a complete line of Seiberling tires. H. J. Higgins is president of the distributing company.

The Vasey Rubber Co., Tucson, Arizona, is acting as jobber for the Badger line of tires, and dealer for Federal tires. The distributing organization reports a good business during the past year.

The Illinois Tire & Rubber Co., 2649 Clybourn avenue, Chicago, Illinois, manufacturer of tires, tubes, mechanical and hard rubber goods, has elected the following officers: Lewis J. De Holczer, president; Gustav F. Berger, treasurer; Henry Baumgarth, secretary; and Herbert A. Jones, assistant secretary and treasurer.

PRODUCTION OF RUBBER SURGICAL APPLIANCES

Data collected by the biennial census of manufactures show that during 1923 the establishments engaged primarily in the manufacture of surgical appliances (not including surgical instruments) reported products valued at $44,968,237, an increase of 38.4 per cent as compared with 1921, the last preceding census year. Included among the products of these establishments are elastic hosiery and belts, pneumatic splints, abdominal supporters, anklets, knee caps, etc.

In this manufacture there were 178 establishments reported for 1923, as compared with 190 in 1921, a decline of 6.3 per cent. The total value, however, of the goods produced increased from $32,495,421 in 1921 to $44,968,237 for 1923.

The Rubber Trade on the Pacific Coast

The rubber trade on the Pacific Coast during the past month has been rather "spotty." A seasonal slowing down in tires and tubes had been expected, but a decrease in sales of mechanical goods was a surprise. However, heels and like goods are selling very well. The easing up is believed to be temporary, due to the comparatively cool weather which the Pacific Coast has lately experienced. A good demand is reported from the oil and mining industries for suction and delivery hose, belting, pump valves, packings, etc. Spring dating orders still account for considerable activity in many of the tire factories. Balloon tire sales are slow but sure; and tire repair materials are in good demand.

The California Wire Co.

Rubber-covered wire will soon be manufactured on the Coast by the California Wire Co., which is allied with the California Cordage Co., Orange, California. The wire company has been making fiber-covered wire and will now manufacture rubber-covered and lead-sheathed wire. A factory will be erected in Pittsburg, adjacent to San Francisco, and later rubber wire covering machinery will also be installed at the factory in Orange. Louis Koth is president.

Pacific Coast Notes

Six-wheel trucks with solid tires have replaced the famous 20-mule teams for hauling borax out of Searles Lake bed in San Bernardino county, California.

A petition for the reduction of the rate on scrap rubber tires to 50 cents per hundred pounds to Chicago and 65 cents to points farther east has been made by the California Development Association of San Francisco to the Transcontinental Freight Bureau.

Eastern rubber executives who have lately been looking over trade conditions on the Coast have included: D. F. Logan, The Fisk Rubber Co., Chicopee Falls, Massachusetts; S. H. Chipman, Michelin Tire Co., Milltown, New Jersey; and T. F. Manville, Johns-Manville Co. Inc., New York, N. Y.

A carbon black plant is being erected in Long Beach, adjacent to the Signal Hill oil district, which will soon turn out a ton a day in its first unit; and other units will, it is said, soon be added. Physical and chemical tests of the new black were conducted in the laboratory of the Long-Turney Rubber Corporation, 1920 East Vernon avenue, Los Angeles.

The Coast Tire & Rubber Co., Oakland, California, reports a marked increase in production of casings and tubes during the past month. The company is now a direct importer of crude rubber from Singapore.

The Allyn Pacific Rubber Co., 1247 Van Ness avenue, San Francisco, is marketing the Allyn self-seal leak-proof tube, which is a double tube, the space between being filled with plastic rubber.

The annual tournament of the Pacific Coast Mechanical Rubber Men's Golf Association was held October 6 and 7 at the Olympic Country Club, San Francisco, California. The following constituted the championship team, all being connected with the Plant Rubber & Asbestos Works, San Francisco: E. N. Pierce, M. S. Sprague, Sydney L. Plant, and C. A. Wright.

It is the impression of those best acquainted with the situation that all the Goodyear airships will continue to be built in Akron, where the company has the equipment, facilities, and experienced workers. When the Goodyear California plant in Los Angeles was laid out in 1919 a large area was set apart for a hangar and aviation field, but this field has since been sold.

The Jack Tire & Rubber Co., Spokane, Washington, reports steadily increasing production of casings and inner tubes. The company has established a tire depot and service station at Division and Riverside streets.

The Hendrie Rubber Tire Co., Torrance, California, has been keeping up production of standard cord casings and red and gray tubes. Thomas H. Thropp, Trenton, New Jersey, is president and general manager. William Baker is treasurer and resident manager.

The Burton-Wade Rubber Co., 1920 East Vernon avenue, Los Angeles, is marketing a blow-out shoe, and other automobile rubber accessories. E. W. Hendrick is manager.

An elliptical non-skid tread standard cord tire of a new design is finding ready sale by the southwest representatives of The B. F. Goodrich Co., according to Branch Manager V. A. Martin, Terminal Building, East Seventh street, Los Angeles. Since January 1 there has been a decided improvement in sales of both tires and mechanicals.

The Miller Rubber Co. has established a California branch at 949 East Fourth street, Los Angeles. The company will have an up-to-date equipment and a Santa Fé railroad spur.

The Pacific Coast Golf Ball Co. has started operations in its new factory, 4924 Loma Vista avenue, Los Angeles. F. M. Greenough is president.

The Paragon Rubber Works, 4827 Huntington Drive, Los Angeles, is operating to capacity on high grade repair stock and molded goods. Samuel B. Johnstone, connected with the plant, is developing an airless tire which is said to be superior to the familiar cushion tire.

The January mid-month production ticket of the Goodyear (California) Tire & Rubber Co. at the Los Angeles plant was 5,000 casings and 6,000 tubes daily. Balloon tire output was approximately 20 per cent of the total casing production. The factory turned out its 4,000,000th tire last month and made over 1,000,000 in 1924.

A good trade in molded goods and vulcanizers' repair materials is reported by the Angelus Heel & Rubber Company, 1417 North Main street, Los Angeles, of which W. E. McCarty is president and E. T. Mihm manager.

W. C. Hendrie & Co., Inc., rubber goods dealers, are erecting a 4-story and basement reinforced concrete building at the intersection of East Fourth street and Town avenue, Los Angeles. The basement is being specially arranged for the storage of rubber goods, and the upper stories will have the most up-to-date facilities.

The business of the C. Fred Thompson Tire Co., Los Angeles, California, has greatly increased during the past year. The company handles McClaren tires.

A good demand for tires, tubes, rims and accessories is reported by The Sutherland Co., Inc., 720 Pacific avenue, Tacoma, Washington, a distributer of General cord casings.

Gates and Goodyear tires and automobile accessories are handled by the Griffin Service Station, Crescent City, California. E. R. Griffin is president.

The Sullivan Tire & Rim House, 818 A street, Tacoma, Washington, handles Firestone balloon tires. Philip Sullivan is president.

A new building, equipped with every modern convenience for the handling of automobile tires, has been completed for the W. B. Guyton Tire & Rubber Co., Inc., Los Angeles and Twelfth streets, Los Angeles, California. This organization, headed by W. B. Guyton, has for fourteen years been a distributer in Southern California for Swinehart tires.

ENGLAND IMPORTED FROM THE UNITED STATES DURING OCTOBER rubber toys, balls, and balloons to the value of $42,250, being followed by the Netherlands, taking goods valued at $15,478; Mexico, $9,481; Canada, $7,776; Australia, $6,079; and British India, $5,460. For the first ten months of the present year England's importations of these goods have been far in advance of those of other countries, reaching a total value of $317,196.

The Rubber Trade in Canada

Canadian weather has been kind to the rubber trade, with a mixture of cold, snow and a few mild days affording a great relief to the wholesale and retail rubber footwear dealers. The trade so far has been confined to the lighter varieties, while the great demand for women's high overshoes made it difficult to keep up stocks. The severe weather in the outlying districts resulted in good business in heavy goods, and if January weather continues like the last two weeks of December there will be a dearth of rubbers in wholesalers' and retailers' hands.

The demand for mechanicals continues good due to industrial and building activity, and the call for druggists' rubber sundries is seasonable, particularly with regard to rubber specialties.

Regarding volume of tire business Canadian manufacturers had a fairly satisfactory year during 1924. Not so, however, in respect to profits. As the general manager of one of the companies expressed it, "The trouble with the tire industry during the past year was not output, but prices. The industry has been overdone, hence we have overproduction and the natural concomitant price cutting."

Canadian Notes

There has been a reduction in the price of 30 by 3½ six-ply cord tires, the new list price in Montreal being $12. Price of ½-inch garden hose was 11½ cents per foot in December, 1924. This is the lowest price in many years.

John Westren, vice-president and general manager of the Dunlop Tire & Rubber Goods Co., Ltd., Toronto, was recently the recipient of an illuminated address to mark his silver jubilee. Mr. Westren has been 29 years continuously with the Dunlop company.

The Ames Holden Tire & Rubber Co., Ltd., Kitchener, Ontario, has opened a sales branch and warehouse at 71 York street, Toronto, where stocks of Rhino tires, tubes, and rubber footwear will be carried. The branch will be in charge of A. W. Thompson and will serve the Province of Ontario, with the exception of Ottawa and adjacent eastern points, and also those western Ontario towns now covered by the Winnipeg and Soo branches.

E. W. Be Saw, general manager of the Firestone Tire & Rubber Company of Canada, Ltd., was a speaker at a recent banquet of the Hamilton Ontario Chamber of Commerce, and made a stirring appeal for made-in-Canada buying. He stated that the Firestone company purchases 98 per cent of materials, excluding rubber, from Canadian sources. "Are we keen enough in our expenditures on equipment in order to turn out products rather than to depend upon protection?" he asked.

W. A. Allan, who died recently, had been associated with the Dominion Rubber Co. for 25 years, and up to three years ago was manager of the Vancouver branch.

T. Y. O'Neill of the Miner Rubber Co., Ltd., Montreal, recently returned from a most successful business trip to Halifax, N. S.

The Canadian automobile racing season ended with contests at the Canadian National Exhibition, Toronto, when existing records were shattered and new records established. Most of the leading drivers used Firestone gum-dipped cords throughout the season. In fact, every Canadian automobile track record is now held on Firestones. The tires used were stock equipment. Three different cars went through between 32 and 36 races on all kinds of tracks without a tire change.

C. M. Woodburn, formerly representing the Dunlop Tire & Rubber Goods Co., Ltd., Toronto, in the city of Ottawa, has been made manager of the Dominion Auto Accessories Stores, Ltd. The Ottawa store under Mr. Woodburn's management will stock bicycle tires, etc.

W. H. Miner, vice-president of the Miner Rubber Co., Ltd., Granby, Quebec, has been elected a non-resident member of the Lotus Club, New York, N. Y.

A retail tire dealer's association has been formed in Calgary, to better trade conditions in the province of Alberta. It is reported that tires are being sold direct to consumers, and one of the objects of the newly formed body is to combat this state of affairs. It is stated that 90 per cent of the tire dealers are members of the association.

Aldermen of the city of Montreal have asked the Executive Committee to confer with the Montreal Tramways Commission with reference to putting in force the contract existing between the city and the company for the operation of bus lines and the establishment of autobus routes. This would naturally mean a heavy demand for tires of the heavy duty type.

W. P. Thompson, manager of the Tire Exchange, Ltd., Winnipeg, Manitoba, has left for California, where he has done an exceptionally large business in popular priced tires. His firm has equipped nearly two hundred cars with balloon tires.

Arthur Brittain Sales Co., Ltd., Montreal, has been appointed exclusive Canadian sales representative for the Gates Rubber Co., Denver, Colorado, manufacturer of tires, fan belts and radiator hose connections.

The Firestone Tire & Rubber Company of Canada, Limited, Hamilton, Ontario, is represented by fifteen distributing organizations which handle the company's products in each of the provinces forming the Dominion. W. A. Pope is general sales manager.

TINNING TESTS IMPRACTICAL ON INSULATED WIRE

All standard tinning tests depend on the appearance of a black deposit after treatment with sodium sulphite solution. A very slight crack or abrasion of the tin surface promptly results in a black spot under the test. Hence samples should not be twisted or bent or subjected to any rough treatment whatsoever.

In almost all wire specifications there is a definite requirement covering adhesion of the rubber to the tinned copper. The result is that it is impossible to remove the insulation from the finished product without first stretching the copper or using some means, such as mercury, to facilitate its removal. It would be unfair to apply the tinning test to a conductor which had been stretched, as this would undoubtedly cause many small breaks in the tin surface, and even if it did not would operate to make the tin coat much thinner. To test for tinning after removing by mercury is of course impossible since the tin coating in that case is amalgamated with the mercury.

Besides the foregoing objections is the fact that a tinning test could not be made because the tin surface is immediately discolored as soon as the rubber is applied and it would be impracticable to tell what black spots were due to the test solution and what were due to rubber discoloration.

All standard tinning tests are designed to establish the quality of the tin coating before fabrication, and the test immediately becomes ineffective when an attempt is made to apply it to the finished product.—*Laboratories Data.*

FOREIGN RUBBER TRADE INFORMATION

Special circulars containing foreign rubber trade information are now being published by the Rubber Division, Bureau of Foreign and Domestic Commerce, Washington, D. C. The publications which give details of the rubber industry in some one country are marked with an asterisk.

NUMBER	SPECIAL CIRCULAR
710	"Provodnic Rubber Factory, Riga, Latvia," etc., etc.
*719	"Mexican Market for Machinery Belting."
721	"Rubber Footwear Trade Active in Canada," etc., etc.
*727	"Markets for Rubber Heels in Cuba, Trinidad and Santo Domingo."
*728	"Market for Water Bottles and Syringes in Pará, Brazil."
730	"Market for Raincoat Fabrics in Brazil," etc., etc.
732	"Tire Market of Concepcion, Chile," etc., etc.
*735	"Market for Rubber Heels in Belgium."

The Rubber Trade in Europe

Great Britain

WITH the coming of the new year the prospects for the rubber industry become more and more auspicious. Those who review the twelve months just completed call attention to the striking changes that occurred in the rubber market, when "optimism was succeeded by heavy depression, only to give place to renewed buoyancy and confidence."

Rubber Stocks Low

In noting the favorable conditions continuing into 1925 *The Financial Times* states:

Perhaps the most remarkable and significant development of the year just finished is the reduction that has taken place in the London stocks of the commodity. At the beginning of 1924 the total quantity held here was approximately 60,000 tons. The amount is now below 30,000 tons, of which it is estimated that some two-thirds are held either against forward contracts or for higher prices and are therefore not available. When it is considered that the stocks in this country constitute practically the only reserve that can be drawn upon, apart from new production, it will be seen to what a slender margin the stock has fallen in relation to the world's requirements of some 35,000 tons per month. It is estimated that, at the present time, from 6,000 to 7,000 tons per month are being consumed in excess of the quantity actually produced. Against this the anticipated increase to 60 per cent in the export allowance for the ensuing quarter will release not more than 4,000 tons additional.

Much has been written during the past year about the increasing supplies from sources other than those subject to restriction, mainly the Dutch East Indies. It will be seen, however, that such supplies have failed to prevent a quite extraordinary and sustained reduction in stocks in London, the world's central market.

Restriction at Crucial Point

The ever-present subject of restriction has called forth the following comments:

Restriction has incontestably saved the industry, although the method by which it is applied, the Stevenson scheme, is not, of course, perfect. To be successful, the plan must be kept within certain limits. In fact, the rate of restriction (50 per cent) has reached a point when young or weak companies, with limited cash resources, may find it difficult to carry on should it be found necessary to continue the present rate for an indefinite period, unless accompanied by a distinct betterment in price. The inference drawn from this is that with a 50 per cent restriction we are near the limit, and the matter of dividends, or at least the rate thereof must be a secondary consideration unless the price is something in the neighborhood of at least 1*s* 7*d* to 1*s* 9*d* per pound.

The scheme has now arrived at the crucial point when it should develop quickly, for better or for worse. It has certainly achieved several important results. It has, firstly, reduced the London stocks by more than 50 per cent; secondly, raised the price of the commodity by 200 per cent; thirdly, enabled estates to rest their weak trees and so assist bark renewal, and, fourthly, but not least, forced the industry to recognize and adopt economical methods of management where in the past extravagance was too often the rule.

Estimates of World's Rubber Production

Those who are studying the future of the industry have made some interesting conclusions. Charles Hope & Son in a recent market report are quoted as saying:

An increase of 10 per cent in consumption during 1925 over the consumption for 1924, which we have estimated as 465,000 tons, gives a total consumption for 1925 of 511,000 tons, against the estimated production available for consumption during that year of 463,000 tons. If these estimates are approximately correct it will mean that consumption will exceed available production by 48,000 tons, and this amount of 48,000 tons will have to be taken out of the existing world's stocks. The total world's stocks that are apparently available for consumption at the end of this year are likely to be about 100,000 tons.

An American view is as follows:

The necessity for an independent American supply of raw rubber, however, no longer appears so great as it did a year ago. In the first place, the very fact of restriction has called attention to the potential over-supply represented by areas already planted. In the second place, it has come to be widely believed that restriction cannot go on indefinitely. In the third place, there is every prospect that the normal growth of demand will remove the alternative between drastic regulation and financial disaster resulting from over-production. And in the fourth place, it is clear that producers in general have made no attempt to take unfair advantage of their position. Measures of control have been designed merely to adjust production to demand in such a way as to stabilize prices at a reasonable level.

Still another authority voices his optimistic conclusions:

In view of what has been said with regard to stocks, fresh supplies and the rate of consumption, it will be seen that the New Year is fraught with interesting possibilities for the rubber producing industry. The surplus supply of rubber has entirely disappeared, and the difficulty, if any, will be to meet the demand during the next twelve months without unduly raising prices. As to the producing companies themselves, the position can be stated in very few words. The present price of rubber is 1*s* 8*d* per pound, but if producers secure an average of no more than 1*s* 6*d* per pound working on an output basis of 70 per cent of standard production they can earn very satisfactory dividends. After three years of depression it would seem that the industry can now look forward to a substantial measure of prosperity.

Rubber Lined Ambulance

An interesting example of a new use of rubber is the installation of a rubber-lined ambulance by the Metropolitan Asylums Board, London. It had been found that wooden flooring for ambulances was unsanitary, due to cracking and chipping, while the substitution of aluminum resulted in exaggerated rattling and vibration. The solution of the problem was found by installing rubber flooring, and lining the ambulance up to the height of the windows with pale gray rubber sheeting, held in place by aluminum beading. All the corners were rounded to ensure easy removal of dust and dirt. Rubber blocks were interposed between the body and chassis frame to eliminate shock, and it has been suggested that another great improvement would be the equipping of the ambulance with balloon tires.

The Institution of the Rubber Industry

The first meeting of the year was held January 5 at the Engineers' Club, London. A. Healey made the leading address, his subject being "The Mechanical Structure of Rubber." The meeting of the Birmingham Section took place January 7 at the Grand Hotel in that city, the leading paper on this occasion being read by H. M. Dunkerley, on "The Methods of Cooling Applicable to Rubber and Rubber Machinery." At the Manchester meeting, held January 15 at the Textile Institute, Deansgate, John Adamson had as his subject "The History of the Rubber Industry in Manchester."

British Notes

The propaganda campaign for the use of crêpe rubber in America, as planned by the Rubber Growers' Association, is meeting with even greater success in 1925 than in the year just closed. The propaganda secretary reports that his trip to Boston was especially successful, and believes that the booking of space for the coming Boston Shoe and Leather Exposition and Convention will bring good results for the crêpe sole industry.

The Birmingham Section of the British Industries Fair was held this year on December 16 and 17 at the offices of the Chamber of Commerce. The foreign samples on display included surgical rubber goods and other classes of mechanical rubber goods such as rubber and balata belting, hose, sheeting, tubing, washers, stoppers, etc.

At the annual meeting of the stockholders of Peachey Process, Limited, held at Willesden on December 17, the chairman, after

moving the adoption of various reports and accounts, stated that there had been a delay in the company's operations, due to certain conditions in the leather division of the organization. Although the company has not yet been able to secure the capital necessary for the manufacture of proofed fabrics, it is believed that output along this line is likely to be one of the most remunerative applications of the process.

Sir John Anderson, president of Guthrie & Co., Limited, 5, Whittington avenue, London, E.C.3, died on December 19 at his residence, Eastcote Place, in Middlesex. Born in 1852, he had spent fifty years of his life in Singapore, taking much interest in the rubber industry, the firm of Guthrie & Co., with which he was associated, controlling one of the largest groups of rubber producing organizations. Succeeding the late Sir Thomas Scott as head of the Guthrie concern, Sir John Anderson came in 1912 to England, being elected in 1913 to the council of the Rubber Growers' Association, and serving as chairman of that body in 1918-19. As a member of the board of Rubber Roadways, Limited, he has also done much pioneer work in connection with the development of rubber paving.

P. Carel Wijnand, one of the firm of Wijnand & Keppler, rubber brokers at Nes 53 (Brakke Grond), Amsterdam, Holland, has retired from the organization. The business will in the future be carried on under the able management of Nico A. C. Hymans.

It is believed that approximately 25 per cent of the automobiles in Great Britain are equipped with rims for straightsides and 75 per cent for clinchers, the Dunlop organization, which has the major portion of the original tire equipment in England, stating that British car manufacturers are greatly opposed to straightsides because they increase the unsprung weight of the car. Michelin representatives place the percentage at 20 per cent inch and 80 per cent clincher, but this is supposed to apply only to their own actual sales. The Dunlop company is urging the adoption of straightsides, and with the realization of the ease of application of this type of casing and its superior wearing qualities, there will gradually come an increase in its use by British motorists.

Belgium

During the period January-August, 1924, Belgium imported 2,563,876 kilos of crude rubber, of which 595,317 kilos were reexported, against 2,094,483 kilos, of which 987,995 kilos were exported, in the corresponding period of 1923. The consumption of rubber in Belgium, therefore, was practically doubled in 1924.

In manufactured goods competition from foreign countries was keenly felt, nevertheless it was possible to increase exports in many articles.

The imports of manufactures of rubber were as follows: tires and tubes for motor vehicles, 1,445,785 kilos, value 29,887,000 francs in 1924, against 1,303,197 kilos, value 25,236,000 francs in 1923; belting of rubber and leather, 41,007 kilos, value 1,223,000 francs in 1924, and 42,609 kilos, value 1,052,000 francs in 1923; other rubber goods, 589,007 kilos, value 41,412,000 francs and 722,227 kilos, value 11,351,000 francs in 1924 and 1923 respectively.

During the same periods exports were: tires and tubes for motor vehicles, 709,629 kilos, value 15,609,000 francs in 1924 and 595,765 kilos, value 10,906,000 francs in 1923; belting of rubber and leather, 255,954 kilos, value 6,990,000 francs in 1924 instead of 212,207 kilos, value 5,243,000, francs in 1923; other rubber goods, 242,693 kilos, value 3,660,000 francs against 203,844 kilos, value 2,701,000 francs. Both imports and exports show increases.

The chief competitors in tires and tubes in 1924 were Italy (519,928 kilos), France (441,010 kilos) and Great Britain (378,539). France, England and the United States, in the order named, supplied most of the other rubber goods and belting. Most of Belgium's exports went to Great Britain, Holland and Germany. It is worthy of note that German exports of rubber have decreased considerably since 1922. At present Belgium sends almost four times as much rubber goods to Germany as she imports from that country.

Germany

The German Automobile Exposition of 1924, opened at Berlin on December 10, was quite a success, considering the financial difficulties prevailing in the industry. It was shown that the small car is receiving unusual attention, the aim apparently being to produce a small, light, cheap car equivalent to the Ford.

Tire manufacturers were better represented than the year before; practically all the important tire firms had good-looking stands where their specialties were effectively displayed.

The Asbest-und Gummiwerke Alfred Calmon A. G., Hamburg, had built a temple of tires topped by a colossal Hansa cord tire having a diameter of 5½ meters and weighing about a ton. The firm also showed giant pneumatics and a balloon tire.

The Continental-Caoutchouc-und-Gutta-Percha Compagnie, Hannover, displayed a number of balloon cord tires and so-called balloon-type cord tires. There was also a solid tire known as the Continental-Elastic-Hollow tire, besides giant pneumatics and a number of other tires.

The Deka-Pneumatik G. m. b. H., Berlin, O. 112, also exhibited balloon tires as chief attraction, and the Deka-Grip-Cord, with nonskid tread that renders chains unnecessary.

Besides accessories, including handles, knee-guards and saddle cushions, the Hannoversche Gummiwerke Excelsior A.-G. Hannover-Limmer exhibited its new Excelsior balloon cord tires in sizes 715 by 115, 730 by 130 and 750 by 145.

The Fulda giant cushion tire was again shown by the Gummiwerke Fulda A.-G., Fulda.

Solid tires were the chief exhibits of the Gummiwarenfabrik S. Herz, G. m. b. H., Berlin S. O. 33, the Liga-Gummiwerke, G. m. b. H., Frankfurt-am-Main; the Berlin-Rixdorfer Gummiwarenfabrik Hans Schumann, Berlin N. 39; the B. Polack A.-G., Waltershausen, Thuringia; and the firm of Vorwerk & Sohn, Barmen.

It was a noteworthy fact that more than 50 per cent of the vehicles exhibited were fitted with balloon tires, which made their triumphal entry at the exposition. The balloon tire was so well advertised at the exhibition that its vogue with the German motoring public is thought to be practically certain.

New German Goods

Dealers in rubber novelties are showing rubber dolls dressed in rubber garments, which can be put off and on, and comprise hats, caps, bathing caps, dresses, aprons and the like. Some of the dolls carry miniature rubber balls or other rubber toys. Of late several patents for doll's rubber clothing have been taken out.

E. Grunwald G. m. b. H., Pasing-München has put on the market a beading machine for seamless nipples, system "Menchen." Hitherto this was done by hand. The machine has been installed by the leading manufacturers and is said to be giving satisfaction.

Business Conditions

While the slight improvement in business conditions caused by the demands for the holiday season had a cheering effect, discussions of the existing situation are generally tinged with impatience if not with pessimism. Statistics continue to show decreased exports coupled with increased imports, and criticism of the government is frequent. To begin with, the raising of the import restrictions and prohibitions took place too hastily, it is declared. Then the government's financial policy is not sound and its taxing system is not considered as being calculated to assist local industry and export trade.

Well-known mercantile organizations have sent in protests demanding immediate further reductions of taxes, simplification of

the laws governing taxes, retrenchment in the government departments, and final settlement of the income taxes paid in advance.

Plans for reorganizing the rubber industry are still interesting many persons. This seems to be all the more necessary since the various price-fixing bodies or cartels are to a certain extent losing their hold. Bad times are making people anxious to strike out for themselves and quite a number are wearying of the dictates of the cartels,—this at a time when, in the opinion of some writers,—the great need of the industry is just this restraint imposed by an organization like a cartel.

German Notes

At the general meeting of the C. Müller Gummiwarenfabrik A.-G., Berlin-Weissensee, the gold-mark opening balance was accepted. It was also agreed to reduce the capital to 900,000 gold marks and the preferential shares to 5,000 gold marks. The new capital is to be increased by 200,000 gold marks.

The Harburger Gummiwarenfabrik Phoenix A.-G., Harburg, has also just changed to a gold mark basis. The capital is now 7,200,000 marks, preferential shares are placed at 5,000 marks and reserves at 800,000 marks.

The Gummi-Werke "Elbe" A.-G., Piesteritz bei Klein-Wittenberg (Elbe) has paid no dividend for the past business year, due to the high taxes, although business was fairly satisfactory. This firm has, like most of the big German firms, opened its balance on a gold mark basis. The capital is 1,240,000 marks and preferential shares 5,000 marks.

On January 1, 1925, the well-known firm of H. Hohendahl, Gummi-und Asbest Gesellschaft. m. b. H., Essen, celebrated its 50th anniversary. The firm began to operate on January 1, 1875, on a small scale and rapidly expanded. The products are men's rubber coats, rubber suits and all kinds of protective clothing for workers, and technical rubber goods.

Norwegian Rubber Factories

The Norwegian rubber industry consists of five establishments employing 700 or 800 people. Imports of crude rubber and guttapercha amounted to 331 metric tons in 1922, and 456 tons in 1923.

The A/S Askim Gummivarefabrik, Askin, makes only galoshes, producing approximately 2,000 pairs daily.

The A/S Den Norske Galosche & Gummivarefabrik, Mjondalen, produces galoshes, rubber boots, tennis shoes, packing, rolling equipment, jar rings for the canning industry, hard rubber electrical supplies, gloves, mats, runners, and floor covering. The plant has a daily productive capacity of 2,000 pairs of galoshes.

The A/S Den Norske Remfabrik, Christiania, manufactures belting, balata and rubber products for technical and chemical uses, and a variety of other rubber articles.

The Mjondalen Gummivarefabrik A/S, Mjondalen, specializes in tubes and technical rubber goods, and rubber soles and heels (trade mark "Jumbo"). Of the latter, the factory can produce 2,000 pairs daily.

The Viking Rem- & Pakningsfabrik A/S, Christiania, specializes in belting and packings (trade mark "Viking"). This firm has a branch and carries stock in Norrkoping, Sweden.

Denmark

Denmark's imports of crude rubber increased from 88 tons in 1922 to 366 tons in 1923. There are four rubber factories located in Copenhagen, two in prominent towns and one in the country.

It is reported that the A.-S. Kvistgaard Rubber Co. in Kvistgaard, near Helsingar, has raised its capital to 418,500 krone.

The Danish Cable industry quadrupled its output as compared with 1913. In 1923 the production of wire was 772 tons against 553 in 1913 and of cable, 5,165 tons as compared with 1,185 tons. Exports are still limited, the amounts in 1923 having been 21 and 547 tons of wire and cable respectively.

Holland

The 1923 report of the Vereenigde Nederlandsche Rubberfabrieken shows a loss of 1,553,141 guilders. This firm was established in September, 1916, with a paid-up capital of 3,500,000 guilders. In 1917 it paid out dividends amounting to 20 per cent; in 1918, 12½ per cent; in 1919, 10 per cent. Since then, however, dividends have ceased. The report states that the affairs of the concern are improving.

A. H. Oosthoek, for many years associated with Weise & Co., Rotterdam and Amsterdam, Holland, has been given general power of attorney by that organization.

The Netherlands Gutta Percha Co.

The Nederlandsche Gutta Percha Maatschappij reports for 1923 that although prices for crops improved, the influence of this on the factory at Singapore was but slight owing to keen competition in technical goods, and prices were lower even than in 1922. However, total results were somewhat better, since sales had increased to a fair extent. The aim of the company now is to increase sales and to this end it desires to negotiate with some important trading company, experienced in the importation of rubber goods, and having branches in the principal places in the Dutch colonies, to undertake the sale of its products with the cooperation of its own staff and under its control. The incomplete cable factory at Sepandjang, near Soerabaia, continues to be an oppressive burden.

Plantation yields were 224,000 kilos against 260,000 kilos in 1922. The plantations at Tjitarik suffered considerably owing to lack of upkeep due to financial circumstances. Although the gross profits were higher than the year before, after paying interest on banking debts and after the usual amortizations, the balance shows a loss of 205,000 guilders.

Latvia

It is reported that the "Prowodnik" in Riga, which was the biggest rubber factory in Russia will be opened again with foreign capital.

A Swiss group including the Schweizerischer Bankverein, Basel, has formed a Swiss-Latvian company with a capital of 12,000,000 lat (lat equals about $0.193) to acquire the factory. The Prowodnik directors are said to have agreed to sell for 8,000,000 lat, for which they will receive shares in the new company for 4 to 5 million lat.

With regard to other Latvian rubber factories, it is learned that the Waronis factory which makes chiefly footwear, technical rubber goods and coats, sent a trial order to Brazil last summer which was approved. It is understood that Brazil plans to ship rubber to Latvia and also to connect with Waronis to form a rubber factory in Rio de Janeiro.

The Kontinent rubber factory established last year was able to employ 500 persons in the summer already and produced daily 4,000 pairs of galoshes, besides tires and tubes, etc.

The newly founded factory Quadrat intends to start in the spring with 400 to 500 employes.

Besides the above, there is also a small rubber goods factory "Wairogs," operating in Riga at present.

Russia

The output of the Soviet rubber trust during May and June, 1924, as announced by the Soviet commercial representative in Germany, was as follows:

	May, 1924	June, 1924	June, 1923
Rubber footwear (1,000 pairs)	205.8	208.5	485.4
Tires and tubes (1,000)	34.9	39.9	19.3
Belting (tons)	61.1	58.4	16.6
Technical goods (tons)	165.6	130.8	46.8
Surgical goods and toys (1,000 dozen)	30.0	23.8	60.8
Elastic webbing and hospital sheeting 100 M²	72.2	76.1	20.0
Total value in 1,000 Rubels at pre war prices	2999.3	2360.4	2212.0

The Rubber Trade in the Far East

Malaya

Restriction to Remain in Force

THE first quarter of the third restriction year is nearing completion and is beginning to yield results. The government finds there is nothing in the situation to warrant repeal of restriction, and the Stevenson plan will remain in force for an indefinite period.

This is bad news for the antis, chiefly the Chinese of Penang, who desire removal of the measure owing to its effect on Asiatic-owned estates. If these estates were assessed on the maximum scale and were allowed to export 50 per cent of what it is claimed is their normal output, opposition would have given way with better prices. It is asserted that the majority of these estates are getting only 25 per cent. The cost of appeals, loss of time and money in obtaining permits causes dissatisfaction, and therefore it is felt in certain quarters that regulations should be modified if the grievances are real.

Most producers view the rise of prices and diminishing stocks with complacency.

The average price of 61 cents (Straits currency) for the current quarter compares well with the averages for the years ended October 31, 1922, 1923 and 1924; namely, 29¾ cents, 52½ cents, and 45 cents respectively.

Another cause for satisfaction is the result of reassessment during 1923-1924. Originally standard production was put at 274,000 tons, but last year allotments were revised and the figure reduced to 246,900 tons, when many people were afraid that the modification would in the end leave the total amount unchanged. Owing to allowances for increased age of trees, the standard production will be higher by about 9,300 tons this year, so that the total will be around 256,200 tons.

Rubber Propaganda

Major MacGregor Knox, the rubber propagandist, speaking at a planters' meeting, said that the new committee would inquire into the world's needs for rubber and investigate the potentialities of the Chinese and Indian markets, where the population was large but the rubber consumption very little. These people would be encouraged to use cheap rubber sandals, for example. Reports on the use of rubber in mines would be sent to Australia, Africa, America and mining institutions in Europe. Finally development of local rubber manufacturing would receive attention from the propaganda committee.

Prize for Rubber Sandal

A prize of $2,500 (Straits currency) has been offered by the Federated Malay States Rubber Propaganda Committee for the design of a sandal most suitable for daily use by the working classes and which will replace the wooden clogs in vogue locally and in China.

Packing of Rubber

The Malayan Tin & Rubber Journal, November 30, 1924, takes up the matter of packing and dirty rubber discussed in THE INDIA RUBBER WORLD and suggests that American manufacturers should tell planters how to prepare and pack rubber.

Usually the greatest care is taken on estates in packing rubber, but when taken out of the cases at Singapore for repacking, and stacked on floors of godowns, it accumulates splinters and dirt. Clean and properly packed rubber is often damaged at the ship's side, where cases are slung aboard ten at a time, squeezed between holding ropes, and then tumbled into the dusty, dirty hold.

The whole blame for dirty rubber, therefore, should be laid at the door of the merchants, who should give due consideration to the matter.

Judging Rubber

For some time there has been a good deal of grumbling over the Singapore Chamber of Commerce methods of valuing rubber by appearance. Frequently rejected rubber is found after expert testing to be of superior quality, while bad but pretty rubber is just as frequently passed. The Central Perak Planters' Association recently passed a resolution expressing dissatisfaction with the present system of judging and grading rubber in Singapore.

The *Straits Times* suggests that each planter should prepare samples and submit them to the Research Institute which would give a printed report on them. The planter could then guarantee the rubber to be equal in quality to the sample.

Incidentally it is worthy of note that Malaya is beginning to pay more attention to the suggestion that manufacturers do not care what the rubber looks like provided its quality is satisfactory.

Restriction Statistics

The following figures show the actual exports from the restriction area and standard production for the period November 1, 1923-October 31, 1924:

	Tons
Standard production for 2nd restriction year	246,900
Exportable allowance on such standard production (for three-quarters at 60 per cent and one-quarter at 55 per cent)	145,054
Add carryover from 1st restriction year	4,000
Additional allowance to small holders under Rule 14	13,500
	162,554
One-third of total cuts (due on reductions in standard production) being estimated production still to be recovered October 31, 1924.	7,250
Total permissible exports, November 1, 1923-October 31, 1924	169,804
Total exports for same period (as published in monthly export returns)	167,696
Carryover to 3rd restriction year	2,108

Certain of the above figures are estimated, but the results may be taken as approximately correct. Two-thirds of the cuts are for the purposes of this return estimated as recovered on October 31, 1924. This fraction is probably an over-estimate.

Revised Export Figures

The Rubber Controller issues a revision of the monthly export returns, according to which the figures for the second restriction year are:

	Tons
Permissible total exports	169,804
Actual	165,678
Carryover to third restriction year	4,126

Ceylon

A select committee of the Ceylon Council has been appointed to report whether rubber restriction should now be discontinued and if not what modification should be made in the present ordinance. There seems to be general dissatisfaction among the Ceylonese over restriction, but more particularly with regard to the working of the Restriction Board. Some growers doubt that restriction has caused the improvement in prices, and others point out that non-restricting countries would extend plantations and in ten years equal Malaya and Ceylon.

There are those who believe that restriction has achieved its purpose by reducing stocks and that many estates have been saved from ruin thereby. It should be remarked that feeling is not so much against restriction as against the working of the details, so that it is possible the committee may succeed in bringing about certain desired modifications.

Restriction of Latex

The Rubber Restriction Board has recommended that rubber latex be included in the Restriction Ordinance. It is proposed that this change shall take effect from January 1, 1925.

Inferior Rubber

A writer in the *Times of Ceylon* makes the interesting point that under restriction only the best grades are produced and no one would fill his allotment with inferior rubber. Therefore the quantity of scraps, scrap crêpes and inferior sheet that comes on the market, amounting to one-third of the catalog weekly, can only be explained by the fact that assessments in many cases are still too high and need to be investigated and revised.

Netherlands East Indies

For some time past little has been said on restriction; however, with the commencement of the third restriction year, local papers have taken the opportunity to restate their attitude toward the measure. There has been little or no change in the attitude of those that were against restriction.

Pro-restrictionists express admiration for the action of the British and regret that the Dutch Government could not agree with the English. Others think that European producers ought to tackle the native problem by making every effort to cut down the cost of rubber. Finally, the great hope is that bud-grafting and seed selection will be attained and higher yields will bring about reductions in the cost of rubber. In this, the Dutch feel that they have a great advantage over the British.

Packing Rubber in Mats

The *Algemeen Landbouw-weekblad voor Nederlandsch-Indië*, beginning with No. 21, of November 22, 1924, published a long article by Dr. O. de Vries on the packing of rubber in mats. Since 1921 tests have been made with mat-packing and at present a fair quantity of rubber thus packed is regularly shipped to Amsterdam and New York.

Experiments are being made with these so-called tobacco mats in three different sizes and styles. The first is a cubic model of 19 by 19 by 24 inches holding 100 kilos of smoked sheet or 75 kilos of crêpe. The second is flat, the dimensions being 55 by 50 by 35 centimeters, containing 50 kilos of crêpe, the crêpe sheets packed flat. Finally, there is a larger flat model, 60 by 75 by 30 centimeters with 75 kilos of crêpe, the crêpe sheets standing on end. This last model so far seems to meet with most approval. One objection is that opening and closing in New York for sampling purposes and at the factory entails more labor than where rubber is packed in cases.

Dr. de Vries states that crêpe, particularly where the sheets are stacked on end, does not mass. Regarding this feature in smoked sheet it will have to be determined whether the cause is in the pressing and whether a better method would prevent it. Shaky piles and the slipping of individual bales owing to the smoothness of the matting will be overcome by using the larger, flat model described above. Difficulty in handling in the sling will also be remedied by substituting this type for the cubic and small flat bale.

Among the advantages of packing in mats with rubber wrapping are: cleaner rubber, lower tare, ease and cheapness of repairing mats. Against this are the facts that cases can be stacked more solidly and higher, cases are easier to load and unload, while sampling takes up less time.

Extent of Rubber and Gutta Percha Cultivation

Communication No. 17 has just been published by the Bureau of Statistics and concerns the areas and outputs of the chief cultures in the Netherlands East Indies for 1923.

As far as rubber is concerned we learn that in that year there were 862 estates planted with Hevea and Ficus. Of this number the majority, 492, are in Java and the rest, 370, are in the outer possessions. The number of estates planted with rubber only was 374, of which 125 are in Java and 249 in the outer possessions. The total area planted was 547,046 bouws (bouw = 1.75 acres), 354,529 bouws having reached the producing stage. The distribution of these areas was 242,955 planted and 150,269 bouws in production for Java and 304,091 bouws planted, 204,260 mature, in the outer possessions.

At the same time there were 6 gutta percha estates, covering a total area of 2,151 bouws of which 1,494 were productive. Three of the estates are in Java and had an area of 2,101 bouws, 1,495 bouws being mature, while the other three with a total area of 50 bouws of which only one bouw was productive are in the outer possessions.

The production of rubber in 1923 came to: 34,153,646 kilos Hevea, plus 5,606 kilos of Ficus for Java and 47,540,367 kilos Hevea for the outer possessions, giving a total of 81,694,013 kilos Hevea and 5,606 kilos Ficus for the Dutch colonies. The yield of gutta percha was 109,346 kilos from Java and 12 kilos from the outer possessions.

To this should be added the production of native rubber, about 53,000 metric tons, all from the outer possessions.

Indo-China

Owing to the fact that most of the planters had to reduce to a minimum and often to give up altogether the upkeep and even the tapping of their holdings during the critical period which for Indo-China was 1918-1922, plantations have sustained a good deal of damage from weeds, depredations of wild animals, brush fires, etc. With the improved condition in the rubber market, planters have often found the putting in order of their estates a formidable task; the land had to be cleared of weeds, destroyed trees replaced by others, buildings repaired and labor secured. All this has pressed heavily on their development.

However, with the improved market condition planting is becoming more remunerative. While during the black years of 1921 and 1922, when the price of rubber fell to 0.52 piasters per kilo, or below the cost of production here, prices from January, 1923, to January, 1924, ranged from 1.10 piasters to 1.28 piasters per kilo. During March and April the average was 0.98 and 0.96 piasters per kilo. Thus although the rate of the piaster went up to 14 francs, the situation was infinitely better than in 1921 when the piaster had dropped to 6-8 francs. The cost of production has been found to be about 0.60 piasters per kilo, and the all-in cost 0.80 piasters. Therefore a price of 1 piaster per kilo at least is necessary for general prosperity here. At 0.80 to 1 piaster per kilo the average planter would be able to get along, some would even still do very well. Below 0.80 piasters the general condition would be bad.

During 1923 practically all the estates did well, some few, specially favored by circumstances or the ability of their managers, were in an excellent situation even at the end of 1922. One company, for instance, made gross profits of 100,000 piasters or 66 per cent of the capital. Another distributed a dividend of 40 per cent after writing off large amounts; a third after regularly writing off its debts and obligations, will pay out a dividend of 10 per cent.

It must not be forgotten, however, that this prosperity has come after ten bad years. And of course, most of the estates are not in the enviable position of those above.

Exports

During the first six months of 1924, Indo-China exported rubber to the amount of 2,652,738 kilos. The bulk of this went to France.

Sole Crêpe Factory in China

According to the *Hongkong Daily Press*, the first factory for sole crêpe in China was established in Canton. At present two new factories are in building at Foochow, probably for the same concern as in Canton. One of the new factories, it is estimated, will have a daily output of 500 soles which will be sold at 75 cents a pair.

Recent Patents Relating to Rubber

The United States

Issued* December 16, 1924

1,519,162 Spring tire. A. Norin, Milwaukee, Wisconsin.
1,519,178 Armored laminated tire. B. von Loutzkoy, Berlin, Germany.
1,519,227 Puncture-closing device for tires. B. Urich, Milwaukee, Wisconsin.
1,519,400 Transmission brake band. R. V. Fitz Gerald, Easton, Pennsylvania, assignor of one half to W. P. Fitz Gerald, Phillipsburg, New Jersey.
1,519,436 Rubber squawker toy. L. E. Brock, Troy, Ohio.
1,519,466 Trouser suspenders. J. J. Mouilbpu, Paris, France.
1,519,557 Waterproof garment. J. F. Sharrock, Salem, Massachusetts.
1,519,622 Aeronautical apparatus. A. T. Pitman, Dayton, Ohio.
1,519,631 Massage roller device. H. F. Sawtelle, Leominster, Massachusetts.
1,519,877 Combination vest and belt, employing elastic braids. A. Piotrowski, Chicago, Illinois.
1,519,971 Cushion tire. J. E. Hale, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

Issued* December 30, 1924

1,520,704 Piston packing. C. C. Farmer, Edgewood, assignor to The Westinghouse Air Brake Co., Wilmerding, both in Pennsylvania.
1,520,760 Automobile tire filler. P. J. McHugh, Cincinnati, Ohio.
1,520,812 Closure for ice bags or the like. A. C. Eggers, Brooklyn, New York.
1,520,876 Magazine powder puff employing sponge rubber. Paris Laboratories, New York, N. Y.
1,520,908 Rubber brush for cleaning nasal passages. A. R. Meyer, Chicago, Illinois.
1,520,925 Tire fabric, comprising metallic strands embedded in rubber. B. R. Blackwelder, La Porte, Indiana.
1,521,081 Valve for inflatable rubber articles. J. P. Dooling, New Haven, Connecticut.
1,521,161 Inflatable translucent rubber toy used in conjunction with an electric light bulb and socket. Burns H. Marshall, Detroit. Michigan.
1,521,169 Resilient lining for ball mills. W. M. Barker, Canton, Ohio.

Issued* January 6, 1925

1,521,808 Ball with sponge rubber core. W. H. Fox, Minneapolis, Minnesota.
1,521,935 Washrag with elastic straps. J. E. Dlwell, Philadelphia, Pennsylvania.
1,522,168 Cushion tire. G. H. Young, St. Paul, Minnesota.
1,522,235 Steering wheel. J. R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.
1,522,295 Combination ice or hot-water cap and bag. O. J. Gee, Ardmore, Oklahoma, assignor to H. W. Stark, Gainesville, Texas.
1,522,448 Calked tire. C. Harig, San Antonio, Florida.

Issued* January 13, 1925

1,522,478 Attaching device for rubber shoe heels. J. Abramowitz, Madison, Illinois, assignor of one half to J. V. Sleb, Venice, Illinois.
1,522,567 Pneumatic tire valve. H. A. Wood, Kingston, Ontario, Canada.
1,522,662 Vehicle wheel with resilient band. C. A. Witter, assignor to Hall Wheel Corporation, both in Philadelphia, Pennsylvania.
1,522,805 Pneumatic tire tube. D. J. Chappell, Llanelly, Wales.
1,522,941 Vehicle rim. E. E. Brunner, assignor to The Goodyear Tire & Rubber Co., both of Akron, Ohio.
1,522,962 Gasket. A. G. Maranville, assignor to The Goodyear Tire & Rubber Co., both of Akron, Ohio.
1,523,041 Armband. F. C. Simmons, Highland Park, Pennsylvania, assignor to Pioneer Suspender Co., a corporation of Pennsylvania.
1,523,043 Core for tires. M. C. Ukman, St. Louis, Missouri.
1,523,119 Rubber and fabric garment. V. Guinzburg, assignor to I. B. Kleinert Rubber Co., both of New York, N. Y.
1,523,180 One-piece garment including a brassiere with elastic members. L. D. Vescovi, assignor of one half to B. P. Scribner, both of New York, N. Y.
1,523,272 Toy balloon. J. F. Mulholland, Columbus, Ohio.

Issued* December 23, 1924

15,972 (Reissue) Rubber heel. A. Troiano. Washington, D. C. Original No. 1,409,070, dated March 7, 1922.
1,520,049 Bathing cap. L. W. Beman, Chicago, Illinois.
1,520,439 Solid tire. C. S. Preston, San Diego, California.
1,520,481 Container for inner tubes for pneumatic tires. W. J. Rostern, New York, N. Y.
1,520,550 Repair device for pneumatic tires. A. A. Peck, Underwood, North Dakota.

*Under Rule No. 167 of the United States Patent Office, the issue closes weekly on Thursday, and the patents of that issue bear date as of the fourth Tuesday thereafter.

The Dominion of Canada

Granted December 16, 1924

245,386 Billiard and pool table cushion with elastic members. F. W. Tilley, Hamilton, Ontario.
245,405 Hose supporter. The American Narrow Fabric Co., assignee of Carl J. Hazelton, both of Worcester, Massachusetts, U. S. A.
245,406 Hose supporter. The American Narrow Fabric Co., assignee of Carl J. Hazelton, both of Worcester, Massachusetts, U. S. A.

Granted December 23, 1924

245,506 Tire inflation gage. Henry Brier, Dartford, Kent, England.
245,518 Inflatable ball. Thomas Dudson, Abertridwr near Cardiff, Glamorganshire, Wales.
245,536 Reinforced solid tire. C. G. Lundstrom, Cleveland, Ohio, U. S. A.

Granted December 30, 1924

245,691 Circular disk of soft rubber for massaging. D. Gray, New York, N. Y., U. S. A.
245,767 Armored tire. American Chain Co., Inc., Bridgeport, assignee of A. C. Pratt, Deep River, both in Connecticut, U. S. A.
245,788 Flexible coupling. The Goodyear Tire & Rubber Co., assignee of E. G. Kimmich, both of Akron, Ohio, U. S. A.
245,789 Air Bag. The Goodyear Tire & Rubber Co., assignee of R. S. Burdette, both of Akron, Ohio, U. S. A.

Granted January 6, 1925

245,873 Shoe heel with rubber lift. C. H. Ingwer, Elyria, Ohio.
245,887 Elastic tip for a heel lift. A. Levy, London, England.
245,973 Cushion tire. The O. & W. Co., Inc., assignee of M. C. Overman, both of New York, N. Y., U. S. A.

Granted January 13, 1925

246,020 Cushion tire with metal springs. J. H. Burns, Brisbane, Queensland, Australia.
246,041 Pneumatic tire. W. W. Gallemore, Mendon, Illinois, U. S. A.
246,056 Rubber heel. W. L. Lawrence, Brooklyn, New York, U. S. A.

The United Kingdom

Published December 10, 1924

223,208 Rubber or elastic footstrap for gaiters. A. Auberge, 12 Rue Melingue, Paris, France.
223,212 Cushion tire. E. Bugatti, Molsheim, Bas-Rhin, France.
223,262 Sponge rubber inner sole. B. Smith, 27 Cank street, Leicester.
223,318 Driving belt. A. G. Barrett and H. H. Burton, Granby Rubber Works, Post Office Place, Leicester.
223,326 Footrest for motorcycles, employing rubber-covered sleeve. R. S. Cundle, 28 Byrom street, Liverpool.
223,364 Dust cap for tire valves. Howell & Co., Paragon Works, High Street, Stroud, Gloucestershire.
223,417 Detachable tire comprising rubber block on a curved metal base. E. H. W. Foot, 17 Welland Terrace, Spalding, Lincolnshire.
223,455 Catamenial appliance employing rubber strips. F. F. Nash, 29 Kyverdale Road, Stoke Newington, London.
223,494 Safety guard for vehicles. J. Kirkland, 36 Hillberry avenue, The Brook, Liverpool.
223,512 Rubber spring connection. O. Y. Imray, 80 Southampton Bldgs., London. (International Motor Car, 25 Broadway, New York, N. Y., U. S. A.).
223,515 Endless track vehicle with pneumatic tired guiding rollers. L. Renault, 15 Rue Gustave Sandoz, Billancourt, Seine, France.
223,522 Sponge rubber pessaries. H. W. Franklin, and J. G. Franklin & Sons, Ltd., Colvestone Crescent, Dalston, London.
223,524 Inner sole of rubber and metal. J. Taylor, 14 Charles street, Widnes, Lancashire.

Published December 17, 1924

223,641 Window blinds with bands of rubber latex. G. F. French, Lower Moss Lane Mills, Chester Road, Manchester; R. French, Newland, Murieston Road, Hale; and W. H. Pinch, 20 Alderley avenue, Claughton, Birkenhead, both in Cheshire.
223,661 Rubber springs. Gloucestershire Aircraft Co., Ltd., H. P. Folland and H. E. Preston, Sunningend Works, Cheltenham.
223,666 Rubber paving block. L. Cox, 42 Clarence Road, Harborne, Birmingham, and E. J. Burt, 15 Ashley Place, London.
223,700 Pneumatic tire pressure gage. J. F. Warwick, Upton Hall, near Southwell, Nottinghamshire.
223,711 Rubber envelope license holder for motor vehicles. H. A. Shelton, G. E. Shelton, C. H. T. and P. E. Shelton, St. Andrews street, Northampton.
223,712 Resilient cushion for motorcycles. W. C. Petrie, 2 Tudor street, London.
223,748 Sole and heel of rubber or rubber composition and employing sponge rubber balls. A. L. McMicken, 3 Alwyne Square, Canonbury Park. London.
223,796 Solid tire. J. B. Parker, 229 Marton Road, Middlebrough.

Chemical Patents will be found on page 282, Machinery and Process Patents on pages 285-286

Published December 24, 1924

223,889 Sponge rubber arch support. F. Hamburger, 104 Goldschlagstrasse, Vienna.
223,920 Cushion tire, Goodyear Tire & Rubber Co., and R. S. Burdette, both in Akron, Ohio, U. S. A.
223,953 Rubber and metal horseshoes. W. H. Giles, 2 Rangemore street, and J. A. Ross, 2 Waterside road, Stapenhill, both in Burton-on-Trent.
224,022 Rubberized vacuum cleaner filter bags. F. Webb, 60 Lambeth Road, London.
224,039 Inflating and deflating rubber valve. S. Saul, 10 Dahmengraben, Aachen, Germany.
224,074 Translucent rubber nipple for nursing bottle. F. C. Jones, 29A Charing Cross Road, London.
224,114 Rubber-faced paving blocks. H. Frood and Ferodo, Ltd., Sovereign Mills, Chapel-en-le-Frith, Derbyshire.
224,209 Universal joint with rubber compression element. Kirchbach'sche Werke Kirchbach & Co., Coswig, Dresden, Germany.

Published December 31, 1924

224,340 Cushioned horseshoe. F. C. Robertson, 1721 West Riverside avenue, Spokane, Washington, and P. P. Rooney, Buffalo, New York, both in U. S. A.
224,345 Support with rubber grip, for drinking glasses, etc. A. Ansell, 121 Stoke Newington Road, London.
224,377 Rubber stopper for vacuum flasks, with lower end vulcanized. C. J. R. Beauchamp, 58 Cambridge road, Battersea, London.
224,407 Horseshoe with rubber body. W. D. Blanchard, The Horse Repository, Etnam street, Leominster, Hertfordshire.
224,443 Horseshoe with layers of rubber. H. A. Bartlett, The Forge, Rectory Road, Farnborough, Hampshire.
224,480 Inflatable life-saving device. M. Elfenson, 61 Nassau street, Toronto, Canada.

Published January 7, 1925

224,528 Necktie frame employing rubber. F. W. Raupach, Pulsnitz, Saxony, Germany.
224,679 Sponge rubber earpiece cap for telephones. F. Tidy, The Lodge, Lynscott, Pampisford Road, South Croyden, Surrey.
224,731 Rubber overshoe. M. M. Dessau, 14 Mincing Lane, London.
224,735 Hair comb with rubber lined guard. F. W. Henning, 23 Chelsham Road, Clapham, London.
224,744 Ear protector with rubber pad. J. P. Winn, Alstone, Tudor Hill, Sutton Coldfield, Warwickshire.

New Zealand

Published November 27, 1924

52,806 Non-continuous tire flap. Beaney Rubber Co., Inc., 117 West 46th street, New York, N. Y., U. S. A.

Published November 13, 1924

51,892 Low pressure pneumatic tire. A. A. Holle, 60 Oxford Terrace, Hyde Park, London, England.

Germany

Design Patents Issued, With Dates of Issue

887,653 (September 25, 1924). Inflatable rubber doll with voice. Max Manfred v. d. Heyden, Helmstedterstrasse 17, Berlin-Wilmersdorf.
887,831 (September 16, 1924). Toy hatchet of rubber or similar material. Sachsland Gummiwarenfabrik, Bürgel, Thuringia.
887,923 (August 19, 1924). Elastic shoe strap with rubber eye. Osk. Zimmlinghaus, Elberfeld.
887,996 (October 9, 1924). Pneumatic rubber insole. Kurt Kranz, Adalbertstrasse 20, Erfurt.
888,000 (October 14, 1924) Pelotte for rupture band. Franz Oczenaschek, Dahlmannstrasse 9, Kiel.
888,037 (August 19, 1924). Toy balloon and the like of seamless rubber. Sachsland Gummiwarenfabrik, Bürgle, Thuringia.
888,042 (September 13, 1924). Fastening for rubber shoe. Tornow & Hoffmann, Nürnberg.
888,092 (October 9, 1924). Sponge rubber used as lining of apparel, etc., to insulate heat. Ludwig Klehe, Harburg-an-der-Elbe.
888,101 (September 10, 1924). Rubber mining shoe. Rudolf Günther, Gruna, Saxony.
888,143 (September 25, 1924). Leather strip on arch-supports with rubber air cushion. Adolf Hohmann, Kronprinzenstrasse 45, Leipzig.
888,228 (September 24, 1924). Ladies' rubber step-ins. Flora Herzberg, née Avellus, Barbarossastrasse 31, Berlin.
888,231 (September 27, 1924). Sponge rubber cover for pencils, penholders and the like. Johanna Grossmann, née Iden, Dorfstrasse 36, Berlin-Mariendorf.
888,255 (October 7, 1924). Sanitary bandage with sponge rubber strip. Meta Abramson, née Willdorf, Joachimstrasse 2, Berlin.
888,267 (October 8, 1924). Bicycle valve with rubber stopper. Karl Ottmann, Sofienstrasse 53, Frankfurt-am-Main.
888,376 (October 10, 1924). Priessnitz band in shape of a nest. Uebersee Gummiwerke A.-G., Wandsbek.
888,521 (September 18, 1924). Rubber joker. Max Manfred v.d. Heyden, Helmstedterstrasse, Berlin-Wilmersdorf.
888,582 (October 11, 1924). Non-slipping seat cushion for sleds. Uebersee Gummiwerke A.-G., Wandsbek.
888,593 (October 13, 1924). Rubber sole for footwear. Liga Gummiwerke A.-G., Frankfurt-am-Main-Hausen.
888,612 (July 18, 1924). Bathing costume of sheet rubber. William Sachs, Lessingstrasse 32, Berlin.
888,665 (October 11, 1924). Floating head-rest for use in bath-tubs. Uebersee Gummiwerke A.-G., Wandsbek.
888,829 (September 15, 1924). Rubber air cushion for saddles of bicycles and motorcycles. Mathias Poppen Delle 43, Mulheim a. d. Ruhr.
888,871 (October 11, 1924). Glove with sponge rubber lining. Uebersee Gummiwerke A.-G., Wandsbek.
889,045 (October 3, 1924). Rubber shawl. William Sachs, Lessingstrasse 33, Berlin.
889,051 (October 7, 1924). Elastic laces with adjustable automatic fastening. Carl Vogt, Schneiderstrasse 9, Elberfeld.
889,165 (October 14, 1924). Perfumed rubber sponge. Uebersee Gummiwerke A.-G., Wandsbek.
889,193 (October 18, 1924), Rubber heel with roughened under-side. Rheinische Gummi-Gesellschaft W. Klotz & Co., Dusseldorf.
889,230 (September 25, 1924). Catheter. Dr. Walter Paetzel, Mariannenufer 4, Berlin.
889,286 (October 20, 1924). Rubber heel patch. Liga Gummiwerke A.-G., Frankfurt-am-Main-Hausen.
889,323 (September 2, 1924). Repair packing for air tubes. Rheinische Elektrizitäts-Gesellschaft m. b. H., Wiesbaden.
889,346 (October 7, 1924). Exchangeable rubber band with hook for cigarette cases. Anton Heinen, Neue Winterfeldstrasse 43, Berlin.
889,379 (October 20, 1924). Rubber tire for trucks and passenger cars. Johann Wagner, Kamerunerstrasse 12, Berlin.
889,552 (October 18, 1924). Toy ball of hot-vulcanized mineralized soft rubber, with colored designs. E. Kübler & Co., m. b. H., Berlin-Reinickendorf-West.
889,563 (October 21, 1924). Rubber ball with parachute. Wilhelm Menge, Asternstrasse 46, Hannover.
889,566 (October 21, 1924). Rubber toy. Wilhelm Friedrich Thiele, Springerstrasse 9, Leipzig.
839,576 (October 22, 1924). Sanitary bandage. Gertrud Schumann, née von der Sanden, Viersen.
889,695 (October 25, 1924). Rubber tire casing for motorcycles. Adolf Heil, Falkstrasse 47, Frankfurt-am-Main.
889,762 (October 21, 1924). Disinfected rubber sponge. Uebersee Gummiwerke A.-G., Wandsbek.
889,868 (October 15, 1924). Hair-net of rubber. Flügel & Polter, Leipzig-Plagwitz.
889,877 (October 23, 1924). Toy cat of rubber. Max Manfred v.d. Heyden, Helmstedterstrasse 17, Berlin-Wilmersdorf.
889,998 (October 28, 1924). Rubber sanitary binder. Lotte Wiebe, née Lutter, Gr. Burgwedel b. Hannover.
890,026 (September 18, 1924). Rubber toy. Max Manfred v.d. Heyden, Helmstedterstrasse 17, Berlin-Wilmersdorf.
890,090 (October 27, 1924). Bar-handle with air-filled rubber cover, for motorcycles. Robert Wolff, Westerhausen bei Quedlinburg.
890,123 (September 22, 1924). Footwear with rubber sole. Firma Friedrich Theilmann, Frankfurt-am-Main-Niederrad.
890,151 (October 16, 1924). Rubber cushion for telephone receiver. Carl Reinshagen Telephonschnur-Kabel und Gummiwerk, G. m. b. H., Ronsdorf, Rheinland.
890,188 (October 29, 1924). Rubber sole for gymnasium and sport shoes. Gottfried Hagen A.-G., Köln-Kalk.
890,227 (October 2, 1924). Rubber cover for damaged cigars. Hans v. Buschmann, Faberstrasse 10, Hamburg.
890,248 (October 16, 1924). Rubber cushion on head-phones for radio apparatus and the like. Max Manfred v. d. Heyden, Helmstedterstrasse 17, Berlin-Wilmersdorf.
890,271 (October 27, 1924). Sponge rubber finger pad for pen-holders, pencils, brushes, and the like. Paul Thieme, Zinzendorfstrasse 45, Dresden.
890,293 (October 30, 1924). Rubber sanitary binder. Lotte Wiebe, née Lutter, Gr. Burgwedel b. Hannover.
890,372 (October 29, 1924). Resilient solid rubber tire. Gottfried Hagen A.-G., Köln-Kalk.
890,388 (October 30, 1924). Sponge rubber finger-pad for penholders, pencils, brushes and the like. Paul Thieme, Zinzendorfstrasse 45, Dresden.
890,391 (October 31, 1924). Bathing shoe of sponge rubber. Max Manfred v. d. Heyden, Helmstedterstrasse 17, Berlin-Wilmersdorf.
890,455 (October 25, 1924). Vaginal syringe. Dr. Friedrich Kraeger, Johann-Georgen-Allee 35, Dresden.
890,464 (October 27, 1924). Leather sandal with sole of solid or crêpe rubber. Schuhfabrik Herbst A.-G., Mannheim-Neckarstadt.
890,545 (October 16, 1924). Rubber gas tube. Franz J. Lück, Kirchnerstrasse 4, Frankfurt-am-Main.
890,665 (October 29, 1924). Rubber cudgel. Freiburger Gummiwerk Ph. Meyer, Freiburg i. Br.
890,763 (October 20, 1924). Solid rubber rings vulcanized onto the ball-bearing shell of roller skates. Rollaufwerke G. m. b. H., Oberhausen, Rheinland.
890,787 (November 3, 1924). Block tire for motorcycles. Ernst Siegling, Hagenstrasse 26-27, Hannover.
890,871 (October 30, 1924). Football bladder with colored parts. Harburger Gummiwaren-Fabrik Phoenix A.-G., Harburg a. Elbe.
890,945 (October 24, 1924). Rubber pad for furniture legs. Friedrich Diergarten, Hennef a. d. Sieg.
890,959 (October 30, 1924). Rubber nipple for infants. Franz Hennes, Augsburgerstrasse 83, Dresden.
891,082 (November 6, 1924). Sport shoe with rubber sole. Curt Geissler, Zeitz.
891,150 (October 24, 1924). Sanitary binder. Otto Roselt & Co., Jena.
891,168 (November 3, 1924). Sponge rubber sanitary bandage. August Linsel, Breiteweg 236, Magdeburg.
891,195 (November 10, 1924). Knee protector for motorcycles and the like. A.-G., Metzeler & Co., Munich.
891,209 (July 29, 1924). Automobile disk-wheel of rubberized fabric. Continental Caoutchouc-und-Gutta-Percha-Compagnie, Hannover.
891,238 (October 14, 1924). Elastic garter. Curt Nestler, Annaberg, i. S.
891,245 (October 20, 1924). Abdominal binder with rubber cord lacing. Karl Stephan, Ilsenburg a. Harz.
891,288 (November 7, 1924). Rubber sole. Friedrich Wilop, Möncke-bergstrasse 7, Hamburg.
891,351 (October 31, 1924). Rubber eraser. Viktoria Gummiwerke G. m. b. H., Berlin.
891,352 (October 31, 1924). Rubber eraser. Viktoria Gummiwerke G. m. b. H., Berlin.
891,353 (October 31, 1924). Rubber eraser. Viktoria Gummiwerke G. m. b. H., Berlin.

891,354 (October 31, 1924). Rubber eraser. Viktoria Gummiwerke G. m. b. H., Berlin.
891,363 (November 5, 1924). Joker of rubber. Wilhelm Friedrich Thiele, Springerstrasse 9, Leipzig.
891,474 (November 8, 1924). Rubber coat with ventilation. Edwin Blum, Sybelstrasse 35, Charlottenburg.
891,485 (November 11, 1924). Toy rubber negro. Max Manfred v. d. Heyden Helmstedterstrasse 17, Berlin-Wilmersdorf.
891,524 (October 9, 1924). Arm-sling of rubber. Wilhelm Ebmeier, Sonnenbergerstrasse 48, Wiesbaden.
891,525 (October 9, 1924). Rubber sash cord. Wilhelm Ebmeier, Sonnenbergerstrasse 48, Wiesbaden.
891,553 (October 29, 1924). Rubber holder for head-phones. Max Manfred v. d. Heyden, Helmstedterstrasse 17, Berlin-Wilmersdorf.
891,594 (November 11, 1924). Sponge-rubber cushion blanket, in perforated, waterproof cover. William Sachs, Lessingstrasse 33, Berlin.
891,691 (November 12, 1924). Rupture band. Dr. Josef Freundlich, Kreuzstrasse 15 Düsseldorf.
891,727 (October 20, 1924). Figures of sponge rubber. Harburger Gummiwarenfabrik Phoenix, A.-G., Harburg, a. E.
891,734 (October 28, 1924). Sanitary bandage. Willy Klüver, Bramfelderstrasse 46, Hamburg.
891,748 (November 3, 1924). Sponge rubber base table for radio apparatus. Uebersee Gummiwerke A.-G., Wandsbek.
891,760 (November 10, 1924). Rubber finger stall Hans Bell, Weyerstrasse 73, Cologne.
891,883 (November 13, 1924). Rubber heel. Kurt Schneider, Wurzen i. S.

Germany

Patents Issued, With Dates of Issue

407,032 (March 30, 1923). Wheel with pneumatic tire. Fernando Barcena de Andres, Vigo, Spain; represented by: Dr. O. Arendt, Berlin W. 50.
407,160 (December 19, 1923). Washing board with rubber surface. George Bauer, Seestrasse 25a and Heinrich Hering, Heinholzerstrasse 67a, Hannover.
407,224 (November 16, 1922). Collapsible pneumatic tire wheel. Edoardo Ferrabino, Turin, Italy; represented by: Dr. S. Hamburger, Berlin S. W. 61.
407,264 (February 14, 1924). Inhaling apparatus. Eugen Sütterlin, Weil, Kr. Lörrach.
407,359 (August 29, 1923). Tire casing. The B. F. Goodrich Co., New York; represented by: G. Benjamin and H. F. Wertheimer, Berlin S. W. 11.
407,535 (May 15, 1923). Braid-covered rubber arm band. Ajax Gummiwebwaren A.-G., Barmen-Wichlinghausen.

Trade Marks

The United States

Two Kinds of Trade Marks Now Being Registered

Under the rules of the United States Patent Office, trade marks registered under the Act of February 20, 1905, are, in general, fanciful and arbitrary marks, while those registered under the Act of March 19, 1920, Section 1 (b), are non-technical, that is, marks consisting of descriptive or geographical matter or mere surnames. To be registered under the latter act trade marks must have been used for not less than one year. Marks registered under this act are being published for the first time when registered, any opposition taking the form of an application for cancellation.

Granted December 16, 1924, Act of February 20, 1905

192,846 The word: PREMIER, on an octagonal background and having immediately above and below it a triangular figure—rubber tubes. The Fisk Rubber Co., Chicopee Falls, Massachusetts.
192,847 The words: RIDE AIR in fancy shaded lettering, indicating red color, the final stroke of the initial R ending with a target-like disk with white center—inserts for leaf springs of motor vehicles. C. F. Hamilton, trading as The Ride Air Co., Los Angeles, California.
192,855 SEGNAM floorings of vulcanized rubber tile, cork tile, and composition tile. Simon Manges & Son, Inc., New York, N. Y.
192,919 POCO-DECK in angular letters graded in size so that the smallest are at the ends and the largest at center, and underscored with triangular design—waterproofed fabrics and rubberized fabrics. Pocono Rubber Cloth Co., Trenton, New Jersey.
192,924 EKLA on a triangular background—rubber tires. The Eclat Rubber Co., Cuyahoga Falls, Ohio.
192,968 ELAST-O-SHIRR, with distinctive lettering and underscored—shirred elastic. The Nichols Mfg. Co., Bridgeport, Connecticut.
192,994 The words: GLAD HAND above two hands clasped in greeting—mittens and gloves of rubber with or without the use of fabric lining or a combination of rubber. Hynes & Daly, ONeill, Nebraska.
193,002 The words: JOHANSEN'S FEETURE ARCH in distinctive arrangement, with the word: PATENTED above and the words: FLEXIBLE RIGID SHANK with FEETURE FIT HEEL below—shoes of leather, or a combination of leather, rubber and fabric. Johansen Bros. Shoe Co., St. Louis, Missouri.
193,077 TU-NU-SOL—shoes of rubber and leather, leather, leather and fabric, or combinations of these. J. J. Daly, Boston, Massachusetts.
193,078 ROD & REEL—rubber boots. Converse Rubber Shoe Co., Malden, Massachusetts.
193,079 NON SKID—shoes with canvas tops and rubber soles. Converse Rubber Shoe Co., Malden, Massachusetts.
193,080 PROFESSIONAL—shoes with canvas tops and rubber soles. Converse Rubber Shoe Co., Malden, Massachusetts.
193,081 PLANTER—shoes with canvas tops and rubber soles. Converse Rubber Shoe Co., Malden, Massachusetts.
193,082 BRONCHO—shoes with canvas tops and rubber soles. Converse Rubber Shoe Co., Malden, Massachusetts.
193,083 NEPTUNE—rubber boots. Converse Rubber Co., Malden Massachusetts.
193,092 PLAYFLEX—boots and shoes of leather or combination of leather, fabric and rubber. Kreider-Creveling Shoe Co., Boston, Massachusetts.

Granted December 16, 1924, Act of March 19, 1920, Section 1 (b)

193,121 BESTOFALL—gloves and mittens made in combination of leather with fabric and rubberized ducking. Northern Glove & Mitten Co., Green Bay, Wisconsin.
193,127 FLEISHER'S WASHABLE, the first word being in script—narrow braided and woven elastic. I. Fleischer & Sons, Cincinnati, Ohio.
193,140 GARLOCK STYLE No. 15—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,141 STYLE No. 31—GARLOCK SILVER BRAND SQUARE FLAX, and beneath this the firm name—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,142 STYLE No. 53—GARLOCK COIL, and the firm name—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,143 GARLOCK STYLE No. 92—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,144 STYLE No. 601—GARLOCK HIGH PRESSURE GASKETS, and the firm name—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,145 STYLE No. 604—GARLOCK HIGH PRESSURE GASKETS, and the firm name—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,147 STYLE No. 144—GARLOCK PALMYRA COIL, and the firm name—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, N. Y.
193,148 GARLOCK STYLE No. 146—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.

Granted December 30, 1924, Act of February 20, 1905

193,369 BIG NINE—shoes with canvas tops and rubber soles. Converse Rubber Co., Malden, Massachusetts.
193,370 CABOOSE—rubber shoes. Converse Rubber Shoe Co., Malden, Massachusetts.
193,402 UNION—linen fire hose. Wm. & Chas. Beck, Inc., Lawrence, Massachusetts.
193,414 A section of tubing, flexed, and bearing the word: FLEXIFORM; beneath this a clover-leaf design bearing the letters DMC—rubber tubing. Metropolitan Device Corporation, Brooklyn, New York.
193,424 BLACKFOOT—vehicle tire casings and tubes. Blackfoot Tire & Rubber Co., Chicago, Illinois.
193,431 CLUBCHEK TOSHEB—rubberized raincoats, cape, ssuits, hats, etc. Archer Rubber Co., Milford, Massachusetts.
193,505 CHECKER CORD, the words separated by a small checker design—tires and inner tubes of rubber, fabric, or rubber and fabric. Original Tire Co., Cincinnati, Ohio.
193,506 TUXEDO—rubber tires for vehicles. Pennsylvania Rubber Co., Jeannette, Pennsylvania.
193,513 "THE HOUSE OF A MILLION PARTS"—piston rings, rubber hose, rubber tires, rubber patches, inner tubes, and rubber, asbestos and felt packing. H. G. John Frank, doing business as Auto Parts Co., Houston, Texas.

Granted December 30, 1924, Act of March 19, 1920, Section 1 (b)

193,573 GARLOCK STYLE No. 145—packing and packing material including rubber. The Garlock Packing Co., Palmyra, New York.
193,575 GARLOCK STYLE No. 778—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,576 GARLOCK STYLE No. 777—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,577 GARLOCK STYLE No. 711—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,578 GARLOCK STYLE 681—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,579 GARLOCK STYLE 605—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,580 GARLOCK-188—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,581 GARLOCK-182—Packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,582 GARLOCK-175—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,583 GARLOCK STYLE No. 117—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,585 GARLOCK STYLE No. 91—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.
193,584 GARLOCK-108—packing and packing material containing rubber. The Garlock Packing Co., Palmyra, New York.

Granted January 6, 1925, Act of February 20, 1905

193,640 DRIGOLF, in script, and underscored with a representation of a golf club—high and low shoes with leather or rubber soles; clothing. Abercrombie & Fitch Co., Inc., New York, N. Y.
193,715 On a triangular background cross-hatched to indicate yellow, the words: OAK BRAND TOY BALLOONS; separating the words BRAND and TOY is a representation of a group of balloons on strings and bearing the letters OAK; the strings of the balloons meet at the lower obtuse angle of the triangle and separate the words RAVENNA, OHIO—toy balloons. The Oak Rubber Co., Ravenna, Ohio.
193,853 SUPERLASTIC, in block letters—narrow elastic. The Arabol Mfg. Co., New York

Granted January 6, 1925. Act of March 19, 1920, Section 1 (b)

193,858 WINCHESTER—tires. Winchester Tire Corporation, Winchester, Virginia.

193,898 FLEETWOOD—inner tubes and tires made wholly of rubber or having rubber incorporated therein. Fleetwood Rubber Co., New York, N. Y.

Granted January 13, 1925, Act of February 20, 1905

193,950 SHUR FOOT, the words being separated by the representation of a goat's head in silhouette—heels of rubber, fabric, or combinations thereof. The Goodyear Tire & Rubber Co., Akron, Ohio.

194,019 "SUPERTWIST"—rubber and fabric tires. The Goodyear Tire & Rubber Co., Akron, Ohio.

194,044 STAND-E-Z-MAT—mats of rubber and rubber composition. O. W. Jackson & Co., New York, N. Y.

194,077 The word: WORLD, at the end of which is a representation of the globe surrounded by a tire and bearing the firm's name—tire tubes. Continental Tire Corporation, Chicago, Illinois.

194,133 Representation of a hand stripping with a knife a worn sole from a shoe—shoes of leather, rubber, fabric, and combinations of these. J. J. Daly, Boston, Massachusetts.

194,134 MUSCLE BUILDER—leather, rubber and fabric shoes. Reyem Shoe Mfg. Co., Inc., Brooklyn, N. Y.

The Dominion of Canada

Registered

36,826 SENIOR—tires, inner tubes, casings, patches and accessories. Ames Holden Tire & Rubber Co., Ltd., Kitchener, Ontario.

36,889 Representation of rolled up hose and belting bearing the words: N. SMITH, TORONTO, CANADA, on the face of three rolls of belting piled one on top of the other—belting, packing, hose, mechanical rubber goods and automobile tires. N. Smith Belting Works, Toronto, Ontario.

New Zealand

Registered

21,186 Representation of a section of belting with a red band running longitudinally of the belt, at one side of the center line thereof—rubber belting. Gutta Percha & Rubber, Ltd., 47 Yonge street, Toronto, Canada.

21,473 MADAME X—reducing girdles and abdominal supports. The Thompson-Barlow Co., 404 Fourth avenue, New York, N. Y., U. S. A.

21,474 The words OAK BRAND TOY BALLOONS on a shaded triangular background, the words BRAND and TOY being separated by a group of balloons on strings which come together at the lower obtuse angle, separating the words: RAVENNA, OHIO—toy balloons. The Oak Rubber Co., Ravenna, Ohio, U. S. A.

B21,726 PMS—rubber belting. Gutta Percha & Rubber, Ltd., 47 Yonge street, Toronto, Ontario, Canada.

The United Kingdom

Published December 10, 1924

453,226 HARBOUR—goods of rubber and gutta percha exclusively in Class 40. Harboro Rubber Co., Rubber Mills, St. Mary's road, Market Harborough, Leicestershire.

453,541 REPSOL—a rubber solution. Crêpe Sole Rubber (Plantation Finished) Ltd., 13 Well street, London, E. C. 1.

Published December 17, 1924

443,276 "RESILOR"—rubber pessaries. Medical Supply Association, Ltd., 167-185 Gray's Inn road, London, W. C. 1.

449,696 Within a rectangular border the representation of a lion, rearing, its front paws resting on the overscoring of the words: NORTH BRITISH; under these two words is the word PROOF, and under this the words: MADE BY THE NORTH BRITISH RUBBER CO., LTD., EDINBURGH—waterproof clothing included in Class 38. The North British Rubber Co., Ltd., Castle Mills, Fountainbridge, Edinburgh.

452,857 Representation of a bird poised for flight on a section of a branch of a tree, and under this the word COLIBRI, the whole being enclosed in a pinked-out circular border—footwear of rubber, leather or skin, footwear with rubber soles, and tennis shoes. Charlotte Elsie Grimmeisen, 5 Passage Piver, Paris, France.

Published December 24, 1924

447,214 MADAME X—abdominal supporters. The Thompson-Barlow Co., Inc., 404 Fourth avenue, New York, N. Y., U. S. A.

447,860 CONTICORD—rubber tires. Continental Caoutchouc and Gutta Percha Co., Hanover, Germany.

451,606 AIRWAYO—waterproof and rainproof clothing. J. Weinberg & Sons, Aquarock Mills, North street, Cheetham, Manchester.

453,224 VANGUARD—canvas fire hose. George Angus & Co., Ltd., St. John's Works, Grainger street, west, Newcastle-on-Tyne, and Bentham Woven Hose and Belting Works, Bentham, near Lancaster.

453,368 "JONPEEL"—waterproof riding coats. Shellard & Co., 19 High street, Barnstaple, Devon.

453,630 O'SULLIVAN'S—rubber heels. O'Sullivan Rubber Co., Inc., 131 Hudson street, New York, N. Y., U. S. A.

Published December 31, 1924

446,172 MADAME X—rubber girdles for wear. The Thompson-Barlow Co., Inc., 404 Fourth avenue, New York, N. Y., U. S. A.

Published January 7, 1925

453,433 GLEASONITE—heels, tips, soles and pads for boots and shoes, included in Class 38. I. T. S. Rubber Co., 42 Great Russell street, London, W. C. 1.

453,434 GLEASONITE—heels, tips, soles and pads for boots and shoes, all made wholly or principally of rubber. I. T. S. Rubber Co., 42 Great Russell street, London, W. C. 1.

453,632 CONCAVE—heels, tips, soles and pads for boots and shoes, included in Class 37. I. T. S. Rubber Co., 42 Great Russell street, London, W. C. 1.

454,026 FELMATIC—goods of rubber and gutta percha exclusively in Class 40. C. W. Cave & Co., Ltd., 56 Gresham street, London, E. C. 2.

Designs

The United States

66,247 Pneumatic tire. Term 7 years. A. B. Schleicher, Los Angeles, California.

66,250 Tire. Term 14 years. J. B. Topham, Zelienople, Pennsylvania.

66,327 Tire tread. Term 14 years. F. M. Hoblitt, New York, assignor to Ajax Rubber Co., Inc., Millbrook, both in New York.

66,364 Tire. Term 7 years. J. B. Gabeline, Burlington, Iowa, assignor to Standard Four Tire Co., Keokuk, Iowa.

66,256 Tire. Term 3½ years. H. D. Ayres, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

66,257 Tire. Term 3½ years. H. D. Ayres, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

66,294 Toy balloon. Term 14 years. W. R. Lorenz, New York, N. Y.

66,303 Tire. Term 3½ years. J. H. Schwartz, assignor to J. Mishne, both of Cleveland, Ohio.

The Dominion of Canada

6,469 Rubber pants for infants, consisting of a trunk with leg holes and indrawn continuous waistline and ventilating net inserts at sides. Kelton Rubber Co., Toronto, Ontario.

17,897,609 MOTOR VEHICLES IN UNITED STATES

Statistics compiled by The B. F. Goodrich Rubber Co. give a total for 1924 of 17,897,609 motor cars and trucks in the United States, an increase of 2,676,426, or 17.5 per cent over 1923, when 15,221,183 vehicles were in use. Over 90 per cent of all the cars in the world are operated in the United States.

Every state in the union showed a gain in registry during 1924. There are now five states having over a million cars. New York, with 1,421,253, a gain of 207,163 over 1923. California, with 1,321,480, a gain of 235,540, the largest numerical gain in any state. Ohio is third with 1,230,000 and Pennsylvania is a close fourth with 1,221,811. Illinois, fifth in rank, is now in the million class, with 1,119,500 cars and trucks.

The automotive industry produced 3,550,898 new cars and trucks in 1924. Deducting the increase in registrations last year of 2,676,426, the remainder, 874,472 gives the approximate number of cars that were discarded during the year. These statistics show that the average life of a car is over 8 years.

During the past year the number of people in the country for each car has been cut from seven to six. California has the most cars per capita with one for less than every 3 people. If California's average were nation-wide, there would be approximately 40,000,000 cars in use in the country, or more than double the present registration. If the industry continues to grow at its present rate, within the next two years there will be one car for every average American family of five people.

AUSTRALIA'S IMPORTATIONS OF AMERICAN RUBBER GOODS

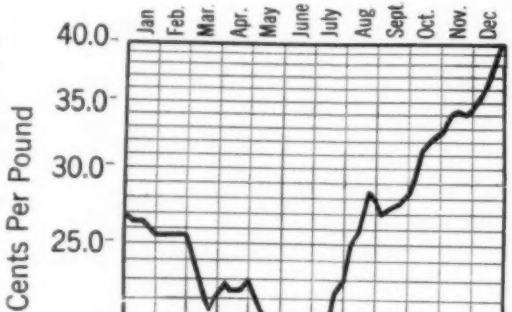
According to *Commerce Reports*, the United States is Australia's leading source of supply for rubber manufactured goods, that country taking from all quarters during the first three months of 1924 a total of £768,506, of which the United States exports represented £343,342, and those from the United Kingdom £118,476. It is said that at present the United States is supplying almost 25 per cent of Australia's total needs of foreign merchandise.

Annual Market Reviews for 1924

New York and London Rubber Markets—Cotton and Fabrics—Compounding Ingredients

New York Rubber Market

THE general decline in prices which characterized the crude rubber spot market during the last four months of 1923 continued until mid-year of 1924. It gained pronounced acceleration early in March, dropping 3½ cents within as many weeks, then reacted a cent a pound until the end of April. The first of May inaugurated a second rapid decline which continued for two months, spot ribbed smoked sheets at 18⅛ cents on June 23 being the low for 1924. Due to the sudden increase of demand immediately following, the market responded with a spirited rise which, under sustained consuming demand continued unabated, except for a cent and a half set-back in September, to the end of the year when ribs sold at 40 cents, an advance in six months of 21¾ cents.



Price Trend of Spot Ribbed Smoked Sheet Rubber—1924

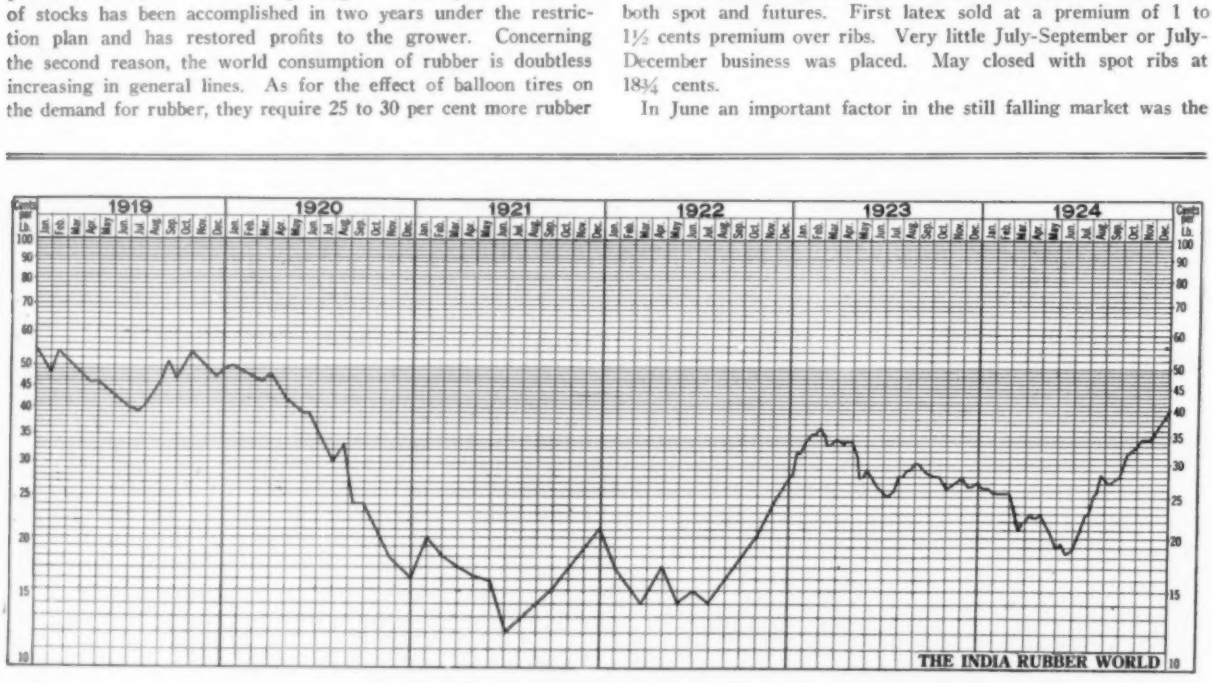
While the margin of profit for rubber producers was small, they recognize that the past year may be looked back upon as a turning point in the history of crude rubber production. The reasons given are: (1) the disappearance of surplus stocks; (2) the fact that a start has been made at last towards a settlement of the World's after-war problems, which should result in a steady improvement in trade conditions; (3) the acceptance of low-pressure or balloon tires. Regarding the first point, reduction of stocks has been accomplished in two years under the restriction plan and has restored profits to the grower. Concerning the second reason, the world consumption of rubber is doubtless increasing in general lines. As for the effect of balloon tires on the demand for rubber, they require 25 to 30 per cent more rubber in their construction than high pressure tires. Their growing popular acceptance will appreciably increase the demand for rubber.

Market conditions viewed progressively for 1924 show that the year opened dull and inactive. Factory buying interest was at a minimum, prices weak and declining. Spot ribbed smoked sheets started the year at 26⅝ cents, slowly declining to 25 cents, followed by a slight temporary rise in which April-June futures were offered at 26⅝ cents.

A fairly active buying interest was apparent among the factories toward the close of February. News from tire manufacturing centers was encouraging and the rapid price decline had not yet begun. The mid-month prices were: spot ribs, 25⅝ cents; March, 25⅛ cents; April-June, 26 cents; and July-September, 28⅝ cents. In March the sensation of the market was the drop in spot to 21⅛ cents, with subsequent low offers and reduced London prices nearly demoralizing the market in the absence of factory demand.

In April and May prices were generally steady in expectation that announcement would be made under the Stevenson plan of a reduction of exportable allowances for the second quarter. London cables, and the fact that the Stevenson Committee did not cut the exportable percentage, renewed the decline in prices on both spot and futures. First latex sold at a premium of 1 to 1½ cents premium over ribs. Very little July-September or July-December business was placed. May closed with spot ribs at 18¾ cents.

In June an important factor in the still falling market was the



Price Trend in the New York Spot Rubber Market for Ribbed Smoked Sheets—1919-1924

LOWEST AND HIGHEST NEW YORK SPOT RUBBER PRICES, 1916-1924

Prices in Cents Per Pound

		January	February	March	April	May	June	July	August	September	October	November	December
1916,	First latex crêpe	70 @ 103	72 @ 90	83 @ 88	74 @ 82	61 @ 74	56 @ 62	52 @ 57	53 @ 56	54 @ 60	56 @ 60	60 @ 69	68 @ 82
	Ribbed smoked sheets	75 @ 102	75 @ 95	87 @ 93	78 @ 86½	64 @ 77½	58 @ 65½	55 @ 65	56 @ 59½	56 @ 65	56 @ 65	62½ @ 74½	70½ @ 87
	Upriver fine	77 @ 99	73 @ 80	74 @ 78	72 @ 74	67 @ 72	62 @ 68	65 @ 68	65 @ 68	69 @ 74	71 @ 80	79 @ 83	78 @ 81
	Upriver coarse	60 @ 76	52 @ 60	56 @ 59	55 @ 57	50 @ 54	39 @ 42	41 @ 42	39 @ 40	41 @ 44	42 @ 46	45 @ 47	47 @ 56
1917,	First latex crêpe	75 @ 80	75 @ 85	82 @ 90	81 @ 83	83 @ 83½	65½ @ 80	65½ @ 67	66 @ 67	66½ @ 67½	63½ @ 65½	57 @ 61	54 @ 60
	Ribbed smoked sheets	75 @ 80	75 @ 75½	81 @ 90	81 @ 83	84 @ 84½	65½ @ 80	65½ @ 67	65 @ 67	65½ @ 67	62 @ 64½	56 @ 62	52 @ 61
	Upriver fine	75 @ 79	77 @ 79	76½ @ 80	75 @ 76	75 @ 76	69 @ 74	68½ @ 69	68 @ 69	68 @ 69	63½ @ 66½	56 @ 62	54 @ 61
	Upriver coarse	50 @ 53	50 @ 53½	52½ @ 54	51 @ 51½	51½ @ 54	49 @ 53	48½ @ 49	48 @ 48½	46 @ 48½	43½ @ 46	36 @ 41½	37 @ 41
1918,	First latex crêpe	53 @ 58	52½ @ 57	55½ @ 60	59½ @ 70	63 @ 68½	60 @ 63	63 @ ...	63 @ ...	60½ @ 63	59 @ 60½	54 @ 63	54 @ 63
	Ribbed smoked sheets	54 @ 57½	53 @ 57	55½ @ 60	59½ @ 70	62 @ 68½	62 @ ...	62 @ ...	62 @ ...	59½ @ 62	58 @ 59½	40 @ 61½	52 @ 61½
	Upriver fine	57 @ 61	56 @ 58	56 @ 60½	60 @ 70	68 @ ...	68 @ ...	68 @ ...	68 @ ...	68 @ ...	63 @ 68	57½ @ 68	61 @ 68
	Upriver coarse	37 @ 41	35½ @ 37½	33½ @ 34½	34 @ 38½	38 @ 42	40 @ ...	40 @ ...	40 @ ...	40 @ ...	35 @ 40	31 @ 40	36 @ 40
1919,	First latex crêpe	52 @ 58	56 @ 58	51 @ 56	47 @ 50½	45½ @ 48	40 @ 45	39½ @ 42½	41¾ @ 45½	45½ @ 52½	49½ @ 55	53 @ 54½	51 @ 54¾
	Ribbed smoked sheets	51 @ 56	54 @ 57	50 @ 54½	46½ @ 49½	44½ @ 47	39 @ 44	38½ @ 41½	39¾ @ 44½	44½ @ 51½	48½ @ 52	52 @ 54	51 @ 54½
	Upriver fine	58½ @ 61	58½ @ 59½	55½ @ 58½	56 @ ...	53½ @ 56¾	55½ @ 56¾	55 @ 55½	54 @ 55	54½ @ 56	52 @ 55	49½ @ 52	47 @ 49
	Upriver coarse	34 @ 36	34 @ 35	34 @ 35	34 @ ...	34 @ 34¾	33½ @ 34	32 @ 33	31½ @ 32	32 @ 33½	33 @ 35	34½ @ 35	35 @ ...
1920,	First latex crêpe	51 @ 55¾	45¼ @ 51½	46 @ 48¼	42½ @ 46½	38 @ 43¾	37½ @ 39	30 @ 35¼	29¾ @ 33¾	24½ @ 29	21 @ 26	18½ @ 21	16¾ @ 19½
	Ribbed smoked sheets	51 @ 55	45 @ 56½	46 @ 48	42½ @ 45	38 @ 43	37¼ @ 39	29½ @ 35	29½ @ 33¾	23½ @ 28¾	20 @ 24	17½ @ 19	16 @ 18½
	Upriver fine	45 @ 50	42½ @ 45	41½ @ 43	40½ @ 42	39 @ 41¼	36¾ @ 38½	34½ @ 35½	30 @ 35	26 @ 30	23½ @ 26	20½ @ 23	18 @ 20½
	Upriver coarse	34 @ 37	31½ @ 34	31¾ @ 32	29½ @ 30½	27¼ @ 28¾	22 @ 32	20 @ 27	18¾ @ 19	15 @ 16½	14½ @ 15½	13 @ 15	14 @ 15
1921,	First latex crêpe	19 @ 21¾	19½ @ 20	18 @ 19½	18¾ @ 19½	17½ @ 19¼	13½ @ 17¼	14 @ 17	14¾ @ 17	14 @ 16	15 @ 17	16 @ 19¾	18 @ 21
	Ribbed smoked sheets	18 @ 20½	17½ @ 19	16¾ @ 18	16 @ 17¾	15½ @ 17½	11½ @ 14¾	11½ @ 15½	13½ @ 15	13¾ @ 15¾	14¾ @ 17	16 @ 19¾	18¼ @ 21¼
	Upriver fine	18 @ 19½	17 @ 17½	17 @ 18	16½ @ 18	16½ @ 18½	15½ @ 18	15½ @ 17½	13½ @ 19½	17½ @ 21½	21 @ 23	22 @ 24½	22¾ @ 24
	Upriver coarse	13 @ 17	13¼ @ 14	11¾ @ 12	09 @ 10½	08¾ @ 09½	07 @ 09¼	07½ @ 09	08¾ @ 11½	9½ @ 11½	11¾ @ 12	12 @ 15	14 @ 15½
1922,	First latex crêpe	15½ @ 21	14 @ 16¾	13¾ @ 15	14¾ @ 16¾	14½ @ 16½	14½ @ 16¼	14½ @ 15¾	13¾ @ 14¾	13¾ @ 15¾	15¼ @ 22¾	22½ @ 26	26¾ @ 28¾
	Ribbed smoked sheets	15½ @ 21¼	14¼ @ 16¾	13 @ 15¼	14¾ @ 16¾	14½ @ 16½	14½ @ 16¼	14½ @ 15¾	13½ @ 14¾	13½ @ 15¾	15¼ @ 22¾	22½ @ 26	26¾ @ 28¾
	Upriver fine	17¼ @ 23	16¾ @ 18½	17 @ 17¾	17¼ @ 19¼	18 @ 18¾	18 @ 18¼	18 @ 20	18¼ @ 19½	18½ @ 24	23¼ @ 25	23½ @ 25½	23¾ @ 25½
	Upriver coarse	12¼ @ 18	12 @ 13¼	12 @ 13	12 @ 14	12½ @ 13¾	12¼ @ 13	12¼ @ 14	13 @ 14	13½ @ 14	13½ @ 19	17 @ 20	17 @ 18½
1923,	First latex crêpe	28½ @ 37½	33⅛ @ 36½	33⅛ @ 35⅞	31⅛ @ 34½	26⅞ @ 31⅜	24⅜ @ 29¼	24⅝ @ 28	27⅛ @ 30⅜	28⅛ @ 30⅜	26⅛ @ 28⅝	26⅜ @ 27½	27½ @ 28⅜
	Ribbed smoked sheets	28½ @ 37½	33⅜ @ 36⅝	33⅜ @ 35⅞	31 @ 34½	26⅞ @ 31⅜	24¾ @ 29¼	24¾ @ 28	27 @ 30⅜	28¾ @ 29⅞	25¾ @ 28¾	26¼ @ 27⅜	26 @ 27½
	Upriver fine	24½ @ 36	30½ @ 36	30½ @ 34	28½ @ 30¾	26 @ 28	26¼ @ 29	26¼ @ 26¾	27 @ 28¾	28¼ @ 29	22 @ 26¼	21½ @ 24½	21¾ @ 23½
	Upriver coarse	18½ @ 28¾	25 @ 28	26½ @ 28¼	26½ @ 28½	21½ @ 25½	23⅝ @ 25	22¾ @ 23½	23 @ 24¼	22 @ 24¼	18 @ 22¾	17¾ @ 19¾	18 @ 19
1924,	First latex crêpe	24¾ @ 27	25 @ 26½	20¾ @ 25½	23⅜ @ 24	18 @ 23⅜	19⅜ @ 21	19⅜ @ 23½	25¼ @ 28¾	27 @ 28⅝	29 @ 33⅜	33½ @ 35	35½ @ 39¾
	Ribbed smoked sheets	24¾ @ 26⅝	25 @ 26	20⅛ @ 24⅜	22 @ 23⅜	18⅜ @ 22⅝	18⅜ @ 19¾	18⅜ @ 22⅝	24⅛ @ 27⅜	26¼ @ 28	28½ @ 33	33¾ @ 35	35½ @ 39¾
	Upriver fine	21 @ 23¾	19¾ @ 20¾	18¼ @ 20½	19 @ 21	18¼ @ 21½	20 @ 21½	20 @ 22¾	23¼ @ 28½	27 @ 30	28½ @ 32½	32½ @ 34	33½ @ 39⅝
	Upriver coarse	17¾ @ 18½	17 @ 17¾	15½ @ 17½	16 @ 17½	13¼ @ 16½	12½ @ 13¼	12½ @ 15¾	15 @ 17½	16¼ @ 17½	18¾ @ 23	22 @ 24	23¾ @ 29

large stock of unsold finished tires in manufacturers' and dealers' hands. Announcement of a reduction of 10 to 15 per cent in tire prices served to move the excess stocks of tires and renew manufacturers' interest in crude rubber supplies. Futures ran only fractionally above spot, which reached the lowest level of the year at 18⅛ cents late in the month.

July was notable as the turning point of rubber prices for the year. Activity of interest and consistently increasing prices lent zest to the market throughout the month. The chief underlying cause was the approach of the third quarter with announcement August 1 of the exportable allowance under the Stevenson plan. Ribbed smoked sheets advanced practically four cents and were continuously in short supply and active demand. First latex crêpe was maintained at 1 to 1¼ cents over ribs.

July 31, spot ribs were 23¼ cents. August 1 brought the announcement of additional restriction reducing the exportable allowance of British controlled plantation rubber to 55 per cent of standard production. Manufacturers' interest was maintained for nearly all positions the last half of the month and ribs held very firm at 26¼ to 28 cents, with spot latex crêpe commanding a cent a pound over ribs.

In September it was evident that the rate of consumption then prevailing if continued for the following three months would assure higher prices for the balance of the year in view of the probability of another 5 per cent reduction in the exportable allowance for the last quarter.

A recession of the price of ribs to 26½ cents September 3 was followed by an advance to 28¼ cents at the close of the month. Most dealers were holding their rubber for October-December and January-March needs.

The strong statistical position of current stocks, the probability of the reduction of exportable allowance to 50 per cent, and the active factory buying advanced rubber between October 1 and 22 by four cents a pound to 33⅛ cents a pound. November-December went to 32½ cents and January-March to 32¾ cents.

In November the enforced limitation of rubber exports to 50 per cent assisted by heavy buying by larger tire companies acted to further stimulate the rise in price which continued through December and developed much interest and activity on the part of consumers. The price level reached in December if maintained for two months may bring the average price for the quarter to 1*s* 6*d*, automatically bringing a 10 per cent increase of the exportable allowance. The Stevenson Committee revised standard production, setting it now at 306,935 tons annually. Continued maintenance of price and 10 per cent quarterly increases will take a full year to attain 100 per cent production.

The year closed with spot ribs at 40¼ cents a pound; January-March at 34½ cents; April-June at 34⅜ cents.

London Rubber Market

The market for the first six months of 1924 showed a gradual but steady decline in price, and for the second six months an equally steady improvement.

While for the first six months the fall averaged about ¾*d* a month, when the turn came in July the advance was more rapid. During January standard grades realized 1*s* 2½*d* a pound; by March the market had fallen to less than a shilling. During April there was a slight recovery but in May the price receded to 9⅝*d* a pound, which was the lowest price of the year.

In June prices varied between 10 and 11*d*. The three months closing with September brought the price to 1*s* 2¾*d*. October prices advanced sharply to 1*s* 5½*d*, but in November after touching 1*s* 6¾*d* there was a setback to 1*s* 4¼*d*. The market again firmed up in December, reaching 1*s* 8*d*. This was the highest point touched in four years. The average price for the entire year was 1*s* 2*d* as compared with 1*s* 3¼*d* for 1923.

The world's consumption of rubber in 1924 is estimated at

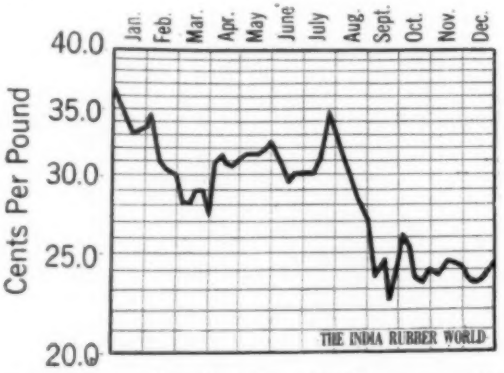
482,000 tons as compared with 412,343 tons in 1923. If the demand experienced during the past few months continues throughout the current year it will necessitate the release of a considerably higher percentage of standard production during each quarter of 1925.

Cotton and Fabrics

American Cotton

In 1924 the prices of spot middling upland cotton fell from the first of the year, rallied to midsummer and then fell rapidly to the year's close losing about 14 cents in the entire year's range. This course is the reverse of that of the same grade in 1923, when it rose from January, fell to its low in midsummer and rapidly rose to the end of the year, closing then about 13 cents higher than on January first.

The 1924 price beginning in January at around 37 cents had fallen to 27½ cents in March. A reaction started in April which by the end of May had advanced the price to 32½ cents. The market failed to hold at that level, however, and dropped about 2½ cents by mid-July, when it recovered rapidly and reached 35 cents near the close of the month. This was its nearest approach to the peak price at the opening of the year. From July to the last of September the decline was rapid, reaching the low of the year at 22½ cents. Early in October the price gained rapidly about 3½ cents and declined for remainder of the year, closing at 24.65 cents December 31.



Fluctuations of New York Spot Middling Cotton—1924

The rapid general decline of the cotton market during the first quarter of 1924 from the high of the year, 36.70 cents January 2, to 27.70 cents March 31 was largely due to the general curtailment of manufacturing activity under the restrictive influence of the sharp advances of the last six months of 1923, which brought forward the problem of adjustment of supply and demand. The hopeful outlook for a larger crop in 1924 based on increase of acreage, enlarged purchases of fertilizer, the good winter rainfall and the minimized survival of boll weevils also served to assist in the decline.

The reaction upward to July 24 when the price reached 35.30 cents resulted from the rapid passage of cotton into consuming channels at a higher rate than was expected. Crop reports in June indicated a million bales less than annual requirements.

The general downward reaction during the last five months of the year was chiefly influenced by improved crop reports, indicating a probable yield in excess of 13,000,000 bales.

Egyptian Cotton

Prices of Egyptian grades fell during the first quarter of 1924 in sympathy with those of American grades, and the staple market ruled dull with downward prices during the second quarter as well. Early in July Boston quotations for prompt delivery were: Medium Sakelaridis, 42-1/16 cents; Medium Uppers, 40¾ cents. During the last week of July the advance of Egyptians was directly proportional to new crop futures. Uppers on spot were exhausted during August.

By November free spot lots of desirable cotton were difficult to locate, and tremendous premiums were ruling, particularly for Sakels, which attained an almost impossible basis, prompt shipments being quoted 4 to 5 cents over futures. December was marked by a heavy strong rise in prices of Sakelaridis grades, the high grades being well over 60 cents a pound. There was considerable rise in uppers but medium grades could still be purchased well under 40 cents. Several large tire companies purchased heavily of extra staple peeler cotton as a hedge against the threatened corner in Egyptians.

Arizona Cotton

Pima grades were in light demand during the first quarter of 1924. The stocks April 30 were reported as 23,114 bales. This was rapidly reduced and prices rose as scarcity increased with demand. In September the new crop indicated only 6,000 bales, owing to the greatly diminished area planted. In November and December stocks practically disappeared. Pima No. 1 at 57 cents and No. 2 at 47 cents were keeping pace with Egyptian Sakels.

Tire Fabrics

Tire fabric manufacturing was normal at the beginning of the year, with prices low although not as low in proportion as those for mechanical goods' ducks. For six months, or until early August, the market was quiet or spotty with absence of contract demand. Prices were weak and based on cotton at prices below the market. Overproduction of tire fabric permitted tire manufacturers to secure supplies at practically their own figures. In July the fabric mills were operating on restricted schedules. The increased demand for fabric in early fall caused the output to the end of the year to be sold out promptly, leaving no surplus and spot stocks.

Prices on carded square woven fabric and carded cords in both Egyptian and Peeler grades suffered a marked decline of practically equal average intensity continuous from the beginning to the end of the year. Square woven carded Egyptian began the year at 75 cents and closed at 66; the corresponding prices for square woven carded Peeler were 66 and 54 cents. Carded Egyptian and carded Peeler cords were respectively 80 and 68 cents in January and 61 and 52 cents in December. Carded Peeler pound prices averaged under carded Egyptian, in square woven fabric 9½ cents, and in cords 9 cents a pound.

Higher prices are expected to obtain in 1925 and consumption is expected to show 10 to 15 per cent increase. The demand is mostly for carded Peeler on account of its good quality and lower price basis.

Much of the changes in the structure of cord fabrics is due to the requirements of balloon tires, which are becoming a rapidly increasing factor in the tire output. Tire mills have definitely increased the use of lower count fabrics and increased the use of rubber proportionally.

The year closed with the leading fabric mills sold up through the first quarter of 1925 at close prices. The acquisition of the tire fabric mills by larger tire manufacturing companies eliminated them from the fabric market in whole or in part and contributed toward greater economy in tire production. The old line fabric mills will continue to supply cotton fabrics to the rubber industry.

Ducks, Drills and Sheetings

The market for ducks, drills and sheetings opened the year quiet and firm with indications of later activity and strong resistance to every price advance. The market, however, soon came to a trading basis by withdrawal of quotations by several mill factors and prices became dull and weak, with business limited and spotty.

In May prices showed some recovery due to scarcity of goods and curtailment of production of sheetings. With midsummer prices revived with better demand and during the fall months increase of activity continued.

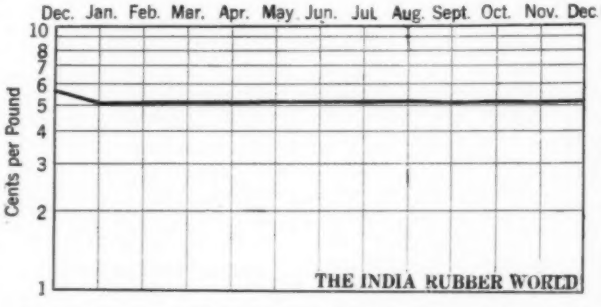
In November customers contracted for their advance requirements to spring of 1925. Sheetings were firm and reported sold

out to February, 1925. The year closed with stocks in good supply and demand by rubber companies gaining sharply in volume.

In each of these lines the price decline was continuous from January to November, when quotations were at the low points for the year. The January and November quotations respectively were as follows: Hose duck, 55 cents and 42 cents; belting duck, 54 cents and 41 cents; 38-inch $2.00 yard drill, 27 cents and 21½ cents; 40-inch $2.35 yard osnaburg, 23½ cents and 18½ cents; 48 by 48, $2.50 yard sheeting, 18¾ cents and 16¼ cents. All these goods experienced sharp advances in December owing to generally improved and active consuming demand, the year closing with the following quotations: hose duck, 44 cents; belting duck, 43 cents; drill, 22½ cents; osnaburg, 19¾ cents; and sheeting, 16¾ cents.

Compounding Ingredients

The tonnage of compounding ingredients used by the rubber industry in 1924 is estimated at about 345,000 tons, whereas for 1923 it was placed at 350,000 tons. The composite price per pound of 16 commonly used ingredients shows a distinct drop during January from 5.64 cents to 5.10 cents. This reduced price was maintained with but slight variation from month to month throughout the year. The average composite price for 1924 was 5.14 cents compared with 6.28 cents for 1923. This reduction is equal to 18 per cent. The fact that the composite price has remained consistently low and uniform for a year in which the output of tires, shoes, mechanicals and miscellaneous rubber goods reached a high level indicates ample supplies and competitive conditions in all lines. The tonnage of compounding ingredients that will be consumed in the rubber industry in the current year will probably exceed that of last year by a liberal margin, according to the outlook for increase in demand for tires, industrial rubber goods and lines of rubber footwear.



Fluctuations Composite Compounding Ingredient Prices—1924

The use of organic accelerators has become general. The annual tonnage requirement of those most generally used is estimated to be approximately 2,700 tons.

Clay as a rubber compounding ingredient is rapidly growing in favor. High grade clay is accepted as a standard compounding ingredient, and the tonnage of its consumption by the rubber industry taxes severely the capacity of producers to prepare it.

The demand for carbon black is well maintained but has not surpassed that of two years ago, when it was estimated at 70,000,000 pounds annually. It has held its own, however. In the past year the new process carbon product from natural gas has demonstrated special inherent qualities as a rubber compounding ingredient.

Litharge is standard, particularly for dry heat and mechanical rubber goods, and its consumption is somewhat routine, aggregating a large yearly tonnage. Domestic litharge was quoted at 10⅔ cents in January and 11¼ in December, 1924. Pig lead rose in February, which advanced litharge to 10½ cents. A reduction in June dropped the price to 10 cents, which stimulated sales, bringing a rise in September to 10½ cents, and this held until the December quotation of 11¼ cents.

Users of whiting have had the benefit of a run of abnormally low prices due to price cutting among whiting producers. The price of car lots of many domestic grades has fallen below that of profitable handling.

The price of zinc oxide was reduced fractionally at the opening of the year and remained constant thereafter at 8⅛ cents a pound for the usual rubber compounding grade. Anticipation of increased demand from the tire industry was slow in realization. In fact, requests for delay of deliveries on compounding ingredients generally ran into heavy tonnage. This was due to general reduction of output in the larger branches of the rubber industry. Revival of tire production stimulated the call for zinc oxide early in the fall, which continued without interruption to the close of the year.

American Exports and Imports in 1924 of Rubber and Rubber Goods

Although the total value of American exports of rubber goods shows for 1924 a considerable advance over 1923, it should also be noted that both the imports into the United States of crude rubber and exports of automobile tires have decreased in quantity and value during the first nine months of the past year, as compared with the corresponding period of 1923. Statistics prepared by the Chamber of Commerce, Washington, D. C., give figures for the rubber industry as follows: Imports of crude rubber and milk of rubber represent for the period under consideration 4.5 per cent of the total value of all imports, but indicate also a decline of 19.9 per cent, as compared with the year previous. Such imports during January-September, 1924, were estimated at $118,943,000, and for 1923, $148,455,000. A quantity comparison showed a loss of 6.7 per cent, the 1924 figure being 514,477,000 pounds, and 1923, 551,579,000 pounds.

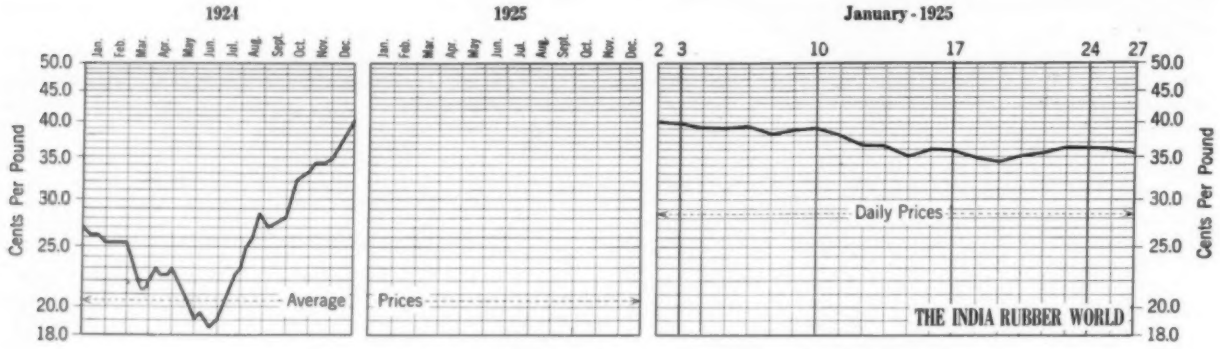
Exports of automobile tires showed during this period a decline also of 8 per cent in value, the 1924 estimate being $15,125,000 and for 1923, $16,438,000. The quantity comparison also indicates a falling-off of 14.3 per cent, from 2,210,000 casings in the nine months of 1923 to 1,894,000 for 1924.

More encouraging figures have been published by the Department of Commerce, however, which show that certain classes of rubber goods, such as rubber footwear, heels, sundries and specialties were shipped in larger quantities in 1924 than in 1923, and that the 1924 total for all rubber goods exported from the United Sates will reach an approximate value of $40,000,000, or a gain of more than $3,000,000 over the previous year. It is believed that the present year will be a favorable one for American rubber manufacturers, and that prospects for the industry are encouraging both at home and abroad. The tire market is expanding, while the promised era of great industrial activity indicates an excellent market for belting, hose and packing, as well as for other commodities.

TIRE PRODUCTION, 1924 AND 1925

In 1925 the tire industry should feel the effect of the large production of automobiles in 1923, from which a substantial increase in tire demand should result. The 1925 production will be needed about as follows: replacements, 41,000,000; original equipment, 13,500,000; export, 1,250,000.

Automobile tire production rose to approximately 50,000,000 casings in 1924. About 750,000 were added to manufacturers' inventories and the remainder were marketed as follows: To automobile manufacturers for original equipment, 13,500,000; tire dealers for sale as replacements, 34,500,000; exported, 1,250,000. In 1923 the Census Bureau reported a production of 45,363,000 casings, and the increase in 1924 was about 10 per cent.—P. L. Palmerton, Department of Commerce, Washington, D. C.



Ratio Graph of New York Closing Prices of Spot Ribbed Smoked Sheets

Review of the Crude Rubber Market

New York

THE crude rubber market was exceptionally active during the closing week of 1924 and there was considerable factory buying. Prices were firm and little stock was offered in the Far East. Forty cents, the highest price of 1924, was reached at the close of the year but declined progressively during January to 34⅜ cents early in the third week. The decline was apparently due to lessening of consumers' demand which had been supplied for current and early future needs, also to liquidation of speculation in the London market. The price reacted promptly the same week in response to London and Singapore advances, reaching with minor fluctuations 35½ cents on January 27.

The market during the first week of the year was somewhat excited and disturbed. Prices at the opening were firm and steady at 39 cents, showing weakness within a few days but quickly recovering with arrival of firm and higher cables from London and Singapore. London stocks early in the month were approximately 29,000 tons. This figure with those covering domestic stocks and stocks afloat for the United States indicated ample supply for 2 to 3 months. This condition with lessened factory demand and heavy London sales caused a decline from 37⅞ cents on January 12 to 35 cents on January 15. The following week the market was nervous, spotty and fluctuating, opening at 34⅞ cents but stiffening at midweek because of higher London cables and the advance of sterling to $4.80¼. Trading was mixed all the week with no definite ideas as to price trend. Spot ribs on January 24 were 36⅛ cents, but declined to 35½ cents on January 27. Rising prices are expected to follow because of the strong statistical position of London stocks and the inevitable active demand indicated by the projected high production schedules of the tire industry extending through the spring months.

December 24, January-March ribbed smoked sheets were 39½ cents; April-June, 39⅛ cents. On January 27, these positions on smoked sheets had declined respectively to 35½ cents; 36¼ cents, and July-September to 35 cents.

Parás early in January ruled steady in sympathy with plantations and later advanced fractionally, with trading confined. Balatas are available but are dull and neglected.

Domestic consumption of all grades of crude rubber for December, 1924, as reported by The Rubber Association of America was 24,479 tons; on hand and in transit, 53,276 tons; afloat for United States ports, 43,905 tons. Consumption of reclaimed rubber was 5,440 tons.

Importations of all grades during December, 1924, were 24,380 tons, compared with 27,871 tons one year ago. Plantation arrivals for December were 22,595 tons, compared with 26,004 tons one year ago. Total importations of plantation rubber for twelve months ended December 31 were 295,055 tons, compared with 282,491 tons for the corresponding period of 1923. Total importations of all grades of rubber for the twelve months ended December 31 were 314,058 tons, compared with 299,858½ tons for the corresponding period of last year.

Spot and future quotations on standard plantation and Brazilian grades were as follows:

PLANTATION. January 2. Spot first latex crêpe, 40¼ cents; Jan., 40 cents; Feb.-Mar., 40 cents; Apr.-June, 40 cents.

January 27. Spot first latex crêpe, 36 cents; Jan., 36 cents; Feb.-Mar., 36 cents; Apr.-June, 35¼ cents; July-Sept., 35¼ cents.

January 2. Spot ribbed smoked sheets, 40¼ cents; Jan., 40 cents; Feb.-Mar., 40 cents; Apr.-June, 40 cents.

January 27. Spot ribbed smoked sheets, 35½ cents; Jan., 35½ cents; Feb.-Mar., 35½ cents; Apr.-June, 35½ cents; July-Sept., 35 cents.

January 2. Spot No. 2 amber crêpe, 39¾-40 cents; Jan., 39¾-40 cents; Feb.-Mar., 39¾-40 cents; Apr.-June, 40 cents.

January 27. Spot No. 2 amber crêpe, 35 cents; Jan., 35 cents; Feb.-Mar., 35 cents; Apr.-June, 35 cents; July-Sept., 34¾ cents.

January 2. Spot No. 1 rolled brown crêpe, 38¼ cents; Jan., 38¼ cents; Feb.-Mar., 38¼ cents; Apr.-June, 39 cents.

January 27. Spot No. 1 rolled brown crêpe, 34¼ cents; Jan., 34¼ cents; Feb.-Mar., 34¼ cents; Apr.-June, 34 cents; July-Sept., 34 cents.

SOUTH AMERICAN PARAS AND CAUCHO. January 2. Spot, upriver fine, 37 cents; islands fine, 34½ cents; upriver coarse, 30½ cents; islands coarse, 20½ cents; Cametá, 21½ cents; caucho ball, 30½ cents.

January 27. Spot, upriver fine, 13½ cents; islands fine, 30½ cents; upriver coarse, 26½ cents; Cametá, 25½ cents; caucho ball, 26-27 cents.

New York Spot Closing Rubber Prices

PRICES IN CENTS, PER POUND

	December, 1924									January, 1925												
	22	23	24	*25	26	27	29	30	31	*1	2	3	5	6	7	8	9	10	12	13	14	15	16	17
PLANTATIONS																								
Sheet																								
Ribbed smoked	39⅛	38⅞	38⅞	....	38⅞	38⅞	39¼	39⅜	40⅛	....	39⅜	39⅝	39	39	39¼	38⅛	38¾	38⅜	37⅞	36½	36⅜	35	35⅞	35¾
Crêpe																								
First latex	39⅛	38⅞	38⅞	....	38⅞	38⅞	39¼	39¼	40	....	39½	39¼	39	39	39¼	38¼	38⅞	39	38	36⅝	36⅛	35¼	35⅞	35⅞
Off latex	38½	38½	38⅛	....	38¾	38¾	39¼	39¼	39½	....	39½	39⅛	38½	38⅝	38¾	37⅛	38⅜	38½	37½	36¼	36	35	35½	35⅛
No. 1 blanket	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
No. 2 blanket	38⅛	38½	38½	....	38¾	38½	39⅛	39⅛	39½	....	39⅛	39¼	38⅜	38¾	38⅞	37⅞	38½	38½	37⅛	36	36	34⅝	35⅛	35¼
No. 3 blanket	38¼	38¼	38½	....	38¼	38¼	39⅛	39	39⅛	....	39½	39	38⅜	38½	38½	37⅛	38½	38⅛	37⅛	35¾	35¾	34½	35	35
No. 4 blanket	38	37⅞	37⅞	....	37⅞	37⅞	38¾	38½	38⅞	....	38⅝	38⅝	38¼	38⅛	38⅛	37¼	37¾	37¾	36⅞	35⅛	35⅛	34⅛	34¾	34¾
Thin, clean brown	38½	38½	38¼	....	38¾	38¾	39	39⅛	39⅜	....	39⅜	39⅛	38¾	38½	38¾	37⅝	38¼	38¼	37½	35¾	35¾	34⅝	35	35⅛
Specky brown	37⅞	37⅝	37¼	....	37¼	37¼	38⅛	38¼	38¼	....	38⅜	38⅜	38¼	37¾	38⅛	37⅛	38	38¼	37½	35⅛	35⅝	33⅞	34⅜	34⅛
Rolled brown	36⅜	36	36⅛	....	36⅛	36⅛	36⅞	37⅝	37⅜	....	37½	37⅜	37⅛	37	37⅛	36⅜	36⅞	36⅜	36½	34⅞	35	33¾	34⅛	34¼

*Holiday.

London

The January market for crude rubber in London followed practically the same general course as that in New York. Realization of profits on rubber at 20*d* immediately after the opening of the year caused a decline which was assisted first by heavy offerings of January-March contracts and the near approach of sterling to parity. Renewal of American current demand stiffened the price January 12 to 19¼*d*. This was succeeded by renewal of the decline based on liquidation of holdings resulting in the low level of the month, January 21, at 16⅞*d*. An advance in New York prices and heavy deliveries from stocks combined to send the price upward a penny at the close of the same week.

Some months ago the Planters Association of Malaya brought out a plan for the modification of restriction in some respects. Their recommendations were forwarded to the Colonial Office, which in its reply refused "to deviate in any particular from the legislation as it as present stands."

Deliveries from stock have brought the London spot reserves to a new low level, distinctly under a month's general supply. The record of weekly stocks are as follows: December 30, 1924, 29,482 tons; January 6, 29,208 tons; January 13, 29,639 tons; January 21, 29,281 tons.

Singapore

The market responded closely in its general features and fluctuations to those in London and New York. The market opened the year quite firm at 19*d* and successively encountered periods of weakness and inactivity during the first two weeks until declines abroad lowered the price January 21 to 16⅛*d*, from which point there was some recovery resulting from improved buying interest in London and America.

New York Quotations

Following are the New York spot rubber quotations, for one year, one month ago, and January 27, the current date:

Plantation Hevea	January 26, 1924	December 24, 1924	January 27, 1925
Rubber latex (Hevea). *per gal.*,	$1.30@	$1.30 @	$1.25 @1.35
CREPE			
First latex	.25¾@.26	.39¼@	.36 @
Off latex	.25½@.26	@	.35¾@
Amber No. 2	.24 @.24½	.38¾@	†.35 @
Amber No. 3	.23⅝@.23¾	.38½@	.35 @
Amber No. 4	@	.38 @	†.35 @
Brown, clean, thin	.23½@.23⅝	.38½@.38⅝	.35 @
Brown, specky	.23½@.23⅜	.38 @	.34 @
Brown, roll	.24 @.24½	.36½@	.34½@
Sole crêpe	@	.42 @.45	.47 @
SHEET			
Smoked, ribbed	.25½@.26	.39⅛@	.35½@
East Indian			
PONTIANAK			
Banjermassin	.08½@.08¾	.08 @	.08 @
Palembang	.09 @	.08½@	@
Pressed block	.14½@	.13½@	.13¾@
Sarawak	.08 @	.08 @	@
South American			
PARAS			
Upriver, fine	.21 @	.36 @	.33½@
Upriver, fine	*.31½@	*.50 @	*.43 @
Upriver, medium	.18 @	.34 @	.30½@
Upriver, coarse	.17¼@	.29 @	.26½@
Upriver, coarse	*.30 @	*.41 @	*.40 @
Islands, fine	.19 @	.33¾@	.30½@
Islands, medium	.16½@	@	.27½@
Islands, coarse	.11 @	@	.25 @
Cametá	.11½@	.19 @	.25½@
Acre Bolivian, fine	.21¼@.21½	.36½@	.34 @
Acre Bolivian, fine	*.32 @	*.50½@	*.44 @
Beni Bolivian	.21½@	@	.34¼@
Madeira, fine	.21½@.22	.36½@	.34¼@
Peruvian, fine	.20 @	.35½@	.33¼@
Tapajos, fine	.20 @	.34¼@	.33 @
CAUCHO			
Upper caucho ball	.19¾@	.29 @	.27 @
Lower caucho ball	*.29 @	*.41 @	*.40 @
Upper caucho ball	.18 @	.27½@	.26 @

South American Maniçobas	January 26, 1924	December 24, 1924	January 27, 1925
Ceará negro heads	.20 @	.27 @	†.24 @
Ceará scrap	.08 @	.18 @	†.14 @
Maniçoba 30% guaranty	.18 @	.26 @	†.26 @
Mangabeira, thin sheet	.22 @	.29 @	†.29 @
Centrals			
Central scrap	.17 @	@	.25 @
Central wet sheet	.14 @	@	.22 @
Corinto scrap	.17 @	@	.25 @
Esmeralda sausage	.17 @	@	.25 @
Guayule washed and dried	.25 @	.31 @	.30 @
Africans			
Benguela, No. 2, 32½%	.11 @.12	†.18 @	†.18 @
Congo prime, black upper	.19 @	.28 @	†.27 @.28
Congo prime, red upper	.20 @	.27 @	†.26 @.27
Kassai, black	.19 @	.28 @	†.27 @.28
Kassai, red	.20 @	.27 @	†.26 @.27
Gutta Percha			
Gutta Siak	.18¾@.19	.18½@	.18 @
Gutta Soh	.22 @	.28 @	.27 @
Red Macassar	2.90 @3.00	3.25 @	2.80 @
Balata			
Block, Ciudad Bolivar	.69 @	.61½@	.63½@
Colombia	.54 @	.51 @	.53 @
Panama	.53 @	.51 @	.53 @
Surinam, sheet	.71 @.73	.76 @	.76½@
amber	.76 @	.79 @	.80 @
Chicle			
Honduras	.62 @.63	‡.58 @.68	‡.58 @.68
Yucatan, fine	.65 @	‡.58 @.68	‡.58 @.68

*Washed and dried crêpe. Shipment from Brazil.
†Nominal.
‡Duty paid.

Comparative Low and High New York Spot Rubber Prices

	January 1925*	January 1924	January 1923
PLANTATIONS			
First latex crêpe	$0.34¼@$0.40¼	$0.24¾@$0.27	$0.27 @$0.37¼
Smoked sheet, ribbed	.34¼@ .40¼	.24¾@ .26⅝	.28⅝@ .37¼
PARAS			
Upriver, fine	.33½@ .37	.21 @ .23¼	.24½@ .36
Upriver, coarse	.27 @ .30½	.17¼@ .18½	.18½@ .28¾
Islands, fine	.30 @ .34¼	.18¾@ .19¾	.22 @ .33½
Islands, coarse	.....	.11 @ .11½	.13½@ .25
Cametá	.17½@ .25¼	.11¾@ .12¾	.13½@ .20

*Figured to January 27, 1925.

SELLING AMERICAN TIRES IN GREAT BRITAIN

According to *Commerce Reports*, practically every new tire marketed through a dealer in Great Britain is sold on the consignment basis. After the war an effort was made to place the business of distributing tires on the safer and sounder basis of direct sales to dealers, but no unanimous agreement could be reached by English manufacturers and importers. At the present time Dunlop, the leading British manufacturer, and Michelin supply the bulk of tires sold in Great Britain.

American tire manufacturers who are not already represented in England and who contemplate entering the market should realize the situation and understand that until conditions change, and no alteration appears likely in the immediate future, British agents willing to take on new American tire lines will expect to take shipments on a consignment basis or against such sufficiently long credit as will enable them to comply with dealer demand for consignment stocks.

IT HAS BEEN ESTIMATED THAT FROM 750,000 TO 1,000,000 pairs of rubber heels are sold annually in Belgium, such heels not being affixed, however, according to American styles. Although the American rubber heel considerably outwears its competitors, there is a limited demand for it, due to its greater cost.

Reclaimed Rubber

The rush to replenish stocks of reclaim as well as general ingredients which was so marked a characteristic in the rubber industry during the fall months has now subsided into a steady demand which is absorbing a large tonnage of reclaim.

After the general advance of reclaim the prices remain unchanged except for a slight rise in one of the leading grades.

Reclaimers generally are now on full time production and experiencing more active demand for their grades than at the same time last year. The outlook for the business of the current year is good, especially in view of the need for reclaim to meet the requirements of rubber flooring makers, and the probable 10 per cent increase in automobile tire output for this year.

New York Quotations

January 27, 1925

Auto Tire			
Black	lb.	$0.08¼ @	$0.09
Black, washed	lb.	.10¼ @	.10¾
Dark gray	lb.	.09¾ @	.10
Light gray	lb.	.11½ @	.12
White	lb.	.14½ @	.15
High Tensile Black			
Super-reclaim, No. 1	lb.	.17 @	.17¼
No. 2	lb.	.12 @	.13
Shoe			
Unwashed	lb.	.09 @	.09½
Washed	lb.	.12½ @	.12¾
Tube			
No. 1	lb.	.14½ @	.15½
No. 2	lb.	.11½ @	.12½
Uncured Tire Friction			
No. 1	lb.	.27 @	.30
No. 2	lb.	.22 @	.24
Miscellaneous			
High grade, red	lb.	.14 @	.14¼
Truck tire	lb.	.09 @	.09½
Mechanical blends	lb.	.06¼ @	.07

British Malaya

Rubber Exports

An official cablegram from Singapore to the Malaya States Information Agency states that the amount of rubber exported from British Malaya during the month of December, 1924, was 24,204 tons. The amount of rubber imported was 11,797 tons, of which 9,298 tons were declared as wet rubber.

The following are comparative statistics:

	1923		1924	
	Gross Exports, Tons	Foreign Imports, Tons	Gross Exports, Tons	Foreign Imports, Tons
January	22,871	4,358	23,844	8,867
February	19,907	4,089	19,395	7,440
March	23,646	5,108	22,294	8,269
April	24,008	5,389	20,551	7,909
May	20,115	5,020	19,674	7,259
June	18,621	4,957	18,084	7,435
July	16,749	5,624	21,670	9,777
August	19,806	7,042	22,133	9,776
September	21,955	5,269	25,127	9,291
October	21,424	6,341	20,270	9,981
November	17,543	7,442	22,488	9,617
December	25,501	7,564	24,204	11,797
Totals	252,146	68,203	259,734	107,418

Distribution

Destination	November, 1924 Tons	December, 1924 Tons
United Kingdom	3,535	2,341
U. S. A.	15,729	18,338
Continent of Europe	1,651	2,397
British Possessions	188	314
Japan	1,346	763
Other Foreign Countries	39	51
Totals	22,488	24,204

AMERICAN IMPORTS OF CRUDE RUBBER DURING SEPTEMBER, 1924, at 59,927,918 pounds, value $12,393,978, were 23 per cent larger than for the month previous, and over twice as large as the totals for September, 1923.

The Market for Rubber Scrap

The last two weeks of 1924 the rubber scrap market was inactive and prices steady. Reclaimers were busy with their inventories and production was curtailed in consequence. Optimistic views prevailed, however, based on the strong statistical position of crude rubber and its advance in price.

The new year opened under quiet conditions with scrap prices firm and the reclaimers slow buyers, up to the middle of the month and beyond, when tire and tube prices became easier, and the list unchanged.

BOOTS AND SHOES. There has been very little doing in boots and shoes. Reclaimers' bids have not been acceptable to dealers. The market has been nominal.

INNER TUBES. Tube scrap is neither higher nor lower than a month ago and the market has been quieter. There is not much business on hand with reclaimers.

MIXED TIRES. There has not been much scrap moved except to the Akron district. Bids have been too low to bring out scrap.

AIR BRAKE AND MECHANICAL SCRAPS. Of these grades air brake only has met with any interest. Prices are nominal.

Consumers' Quotations for Carload Lots Delivered

January 27, 1925

Boots and Shoes			
Boots and shoes, black	lb.	$0.02¾ @	$0.02⅞
Trimmed arctics, black	lb.	.01⅞ @	.02
Red and white	lb.	.01 @	.01¼
Untrimmed arctics	lb.	.01¼ @	.01⅜
Hard Rubber			
Battery jars, black compound	lb.	.01 @	—
No. 1 scrap	lb.	.05 @	.06
Inner Tubes			
No. 1 floating	lb.	.06¼ @	.06½
No. 2 compounded	lb.	.04¼ @	.04½
Red	lb.	.03¼ @	.03½
Mechanicals			
Black scrap, mixed	lb.	.01½ @	.01¾
Heels	lb.	.00¾ @	—
Horseshoe pads	lb.	.01 @	—
Hose, air brake	ton	20.00	@22.00
regular	ton	17.00	@20.00
Red, scrap, mixed	lb.	.02 @	—
White, scrap, mixed	lb.	.02 @	—
Tires			
PNEUMATIC			
Auto peelings	ton	50.00	@60.00
Bicycle	ton	12.00	@15.00
Standard white auto, with beads	ton	30.00	@35.00
Mixed auto, with beads	ton	20.00	@22.00
SOLID			
Carriage	ton	25.00	@27.00
Truck, clean	ton	38.00	@40.00

U. S. CRUDE RUBBER IMPORTS, JANUARY-SEPTEMBER

Importations into the United States of crude rubber have shown an increase to 152,320,484 pounds, value $31,444,720, for the quarter ending September, 1924, as compared with 113,278,873 pounds, value $31,130,777, the totals for the corresponding quarter of 1923. For the first nine months of the year 1924, however, the total amount of crude rubber imported has declined to 515,766,445 pounds, value $118,884,202, as against the corresponding figures for the 1923 period of 551,445,422 pounds, value $148,405,547. The largest monthly total for the past year is recorded for April, with 85,042,981 pounds, value $20,531,821, as against the highest figure for 1923, occurring in May, of 80,107,447 pounds, value $24,953,222.

DURING THE FIRST TEN MONTHS OF 1924 ENGLAND IMPORTED from the United States 173,744 pairs of rubber boots, value $471,408, and 243,464 pairs of rubber shoes, value $161,084.

The Market for Chemicals and Compounding Ingredients

New York

SINCE the beginning of the year compounding ingredients in general have been moving steadily into consumption. Many contracts have been placed in larger amounts than last season to cover the increased rubber manufacturing needs of the current year, especially in tires, footwear and mechanicals. In all of these lines capacity production seems assured for the first half year, at least.

ACCELERATORS. All the well known accelerators are in good demand. In large production schedules ultra-rapid accelerators are meeting with increased favor. It was announced recently in the trade that a larger number of metallic salts of dithio carbamic acid have been made and their use studied in connection with zinc, lime, litharge and magnesia as activators along with clay, antimony and carbon black. Some of these accelerators are said to occasion a startling increase in tensile properties and will soon be described.

BENZOL. More by-product coke ovens are coming in and supplies are increasing. Prices have been maintained and the market is firm, due to improved demand for benzol by the many consuming interests.

CARBON BLACK. While rubber makers were not actively in the market early in January good bookings for supplies for the year have since been made. Prices have been firmer and 8 cents a pound has been predicted.

CLAY. Producers of high grade clay for rubber compounding can with difficulty meet the steadily increasing demand. The cheaper competitive clays are finding steady use for special purposes, particularly if well dried and properly ground. The total tonnage of cheap clays used by rubber goods manufacturers is believed to be decreasing, owing to difficulties with excess moisture.

LITHARGE. There have been three advances in the price of litharge since the last of December, due to the rise in the price of pig lead. The price of domestic litharge is now 13¼ cents a pound. Litharge is indispensable as an ingredient in many rubber goods, hence, its steady demand from the rubber trade.

WHITING. Both that from natural mineral sources and the precipitated product are in active request. Prices remain very low, however.

New York Quotations

January 27, 1925.

Accelerators, Inorganic

Lead, carbonate	lb.	$0.12	@
Lead, red	lb.	.13¾	@
sublimed blue	lb.	.11½	@
sublimed white	lb.	.11½	@
Lime, flour	lb.		@
R. M. (factory)	lb.	.01¼	@
R. M. hydrated	ton	15.00	@$40.00
superfine	lb.	.01½	@ 0.02
Litharge	lb.	.13¼	@ .14
Magnesia, carbonate	lb.	.10½	@ .11
calcined, light (bbls.)	lb.	.24	@ .45
calcined, ex. light (bbls.)	lb.	.40	@
calcined, md. light (bbls.)	lb.	.15	@
calcined, heavy (bbls.)	lb.	.04¾	@ .07
magnesium, carbonate, light	lb.	.07	@ .07½
Orange mineral A.A.A	lb.	.16¾	@
Rubber lead	lb.	.11	@

Accelerators, Organic

A-7	lb.	.75	@ .85
A-19	lb.	.85	@ .95
Accelemal	lb.	.30	@
Aldehyde ammonia powder	lb.	.95	@
Anhydro formaldehyde aniline	lb.	.38	@
Anhydroformaldehyde-para-toluidine	lb.	1.11	@
Aniline (factory)	lb.	.17	@
sulphate	lb.		@
Benzidine (base)	lb.	.76	@
Cryline	lb.	.60	@
Dimethylaniline	lb.	.35	@
Di-ortho-tolylguanidine	lb.	1.26	@
Di-ortho-tolythiourea	lb.	.32	@
Diphenyl guanidine	lb.	1.10	@ 1.20
Ethylidene aniline	lb.	.75	@
Excellerex	lb.	.40	@ .45
Formaldehyde aniline	lb.	.42½	@
Hexamethylene tetramine	lb.	.85	@
Lead oleate (fac'ty)	lb.	.16	@
Methylene aniline	lb.	.34	@ .40
Methylenedianilide	lb.	.40	@
No. 999	lb.	.18	@
Shawinigan paraldehyde	lb.	.17	@ .19
Para nitrosodimethylaniline	lb.	.99	@
Paraphenylene diamine	lb.	1.30	@ 1.40
Quinodine	lb.	.40	@
Super-sulphur, No. 1	lb.	.50	@
No. 2	lb.	.20	@ .30
Tuads	lb.	4.50	@ 6.00
Thiocarbanilide	lb.	.25	@ .36
Triphenylguanidine	lb.	.71	@ .75
Vulcone	lb.	.89	@

Acids

Acetic 28% (bbls.)	100 lbs.	3.12	@ 3.38
glacial (carboys)	lb.	.16	@
Creylic (95% straw color)	gal.	.62	@ .65
(95% dark)	gal.	.58	@ .61
Sulphuric, 66° (carboys)	lb.	.02	@

Alkalies

Caustic soda	100 lbs.	$3.10	@$3.90
flake, 76% (factory)	100 lbs.	3.60	@ 4.31
solid, 76% (factory)	100 lbs.	3.20	@ 3.91

Colors

BLACK

Aerfloted arrow	lb.	.06	@ .10
Bone	lb.	.07	@ .09½
Carbon black	lb.	.06	@ .10
compressed	lb.	.06½	@ .11
uncompressed	lb.	.06½	@
Charcoal (pow'd)	lb.	.05	@ .09
Drop	lb.	.08	@ .09
Ivory black	lb.	.12	@ .30
Lampblack	lb.	.10	@ .16
Micronex	lb.	.07	@ .12
A. & W. nonfli	lb.	.40	@
Shawinigan	lb.	.17	@ .18
Thermatomic carbon (factory)	lb.	.04	@

BLUE

Cobalt	lb.	.21	@ .26
A. & W. blue	lb.	2.00	@ 4.00
Prussian	lb.	.40	@ .50
Ultramarine	lb.	.30	@ .35

BROWN

Iron oxide	lb.	.04½	@ .05½
Sienna, Italian	lb.	.07½	@ .08
Umber, Turkey	lb.	.04½	@ .05

GREEN

Chrome, light	lb.	.29	@ .31
medium	lb.	.31	@ .32
dark	lb.	.33	@ .35
commercial	lb.	.10	@ .10¼
tile	lb.	.13	@ .15
A. & W. green	lb.	2.00	@ 3.00
Oxide of chromium	lb.	.36	@ .51
T. K	lb.	.40	@ .45

RED

Antimony, golden	lb.	.22	@ .25
golden T. K	lb.	.18	@ .22
golden R.M.P. No. 7	lb.	.20	@
golden pentasulphide, T. K	lb.	.33	@ .35
golden, 15/17% G. E	lb.	.22	@ .25
golden, 15/17% F. S	lb.	.18	@
golden, No. 1	lb.	.30	@
golden, No. 2	lb.	.20	@
Antimony, crimson	lb.	.42	@ .45
crimson T. K	lb.	.45	@ .50
crimson, 15/17% G. E	lb.	.40	@ .45
crimson, 15/17% F. S	lb.	.39	@
crimson, R.M.P. No. 3	lb.	.50	@
crimson F	lb.	.45	@
7-A	lb.	.55	@
Z-2	lb.	.20	@
Vermillion, 5% F. S	lb.	.65	@

RED—Continued

Vermilion 15/17% F.S.	lb.	$0.50	@
Arsenic, red-sulphide	lb.		@
A. & W. red (4 shades)	lb.	1.50	@ 3.00
purple	lb.	2.00	@ 3.00

Iron oxides

domestic	lb.	.12	@
English	lb.	.11½	@
English Indian	lb.	.09	@ .13
Indian, pure	lb.	.05	@ .13
pure bright	lb.	.11	@ .14
reduced	lb.	.07	@ .11
Spanish	lb.	.02½	@ .05
Levigated, waterfloated	lb.	.02½	@ .02¾
Venetian	lb.	.02	@ .05½
Oximony	lb.	.13¾	@
Pará toner	lb.	.90	@ 1.00
Toluidine toner	lb.	1.95	@ 2.25
Vermilion, English	lb.	1.35	@ 1.40

WHITE

Akcolith	lb.		@
Albalith	lb.	.06¾	@ .06¾
Aluminum bronze	lb.	.60	@ 1.25
Lithopone	lb.	.06¾	@ .06½
Sterling	lb.	.06¾	@ .06¾
Azolith	lb.	.06½	@ .06¾
Imported	lb.	.05½	@ .06¼
Red seal, imported	lb.		@
T. O. pigment	lb.	.15	@ .17
Zinc oxide			
AAA, lead free	lb.	.08	@ .08¼
Azo (factory):			
ZZZ (lead free)	lb.	.07¾	@ .08¼
ZZ (5% leaded)	lb.	.06½	@ .07¾
Z (8.10% leaded)	lb.	.06½	@ .07¾
French process, Florence brand			
Green seal	lb.	.10¾	@ .11½
Red seal	lb.	.09½	@ .10½
U. S. P.	lb.	.15½	@ .17½
White seal	lb.	.11½	@ .12½
Horse Head brands			
Selected	lb.	.08½	@ .08¾
Special	lb.	.08½	@ .08¾
XX red	lb.	.08	@ .08¼
Leaded brands			
Lehigh	lb.	.07¾	@ .07¾
Standard	lb.	.07½	@ .07¾
Sterling	lb.	.07½	@ .07¾
Superior	lb.	.07¼	@ .07¾
Palmerton process			
Kadox, black	lb.	.10¾	@ .11¾
blue	lb.	.09¾	@ .10¾
red	lb.	.08¾	@ .09¾
Snow white	lb.		@

YELLOW

Arsenic	lb.	.65	@ .75
Chrome	lb.	.18	@ .21
A. & W. yellow	lb.	2.50	@ 4.00
India rubber	lb.	.75	@
Ochre, domestic	lb.	.02	@ .02½
imported	lb.	.03	@ .04

Compounding Ingredients

Aluminum flake (sacks C.L.)	ton	$21.85	@
(sacks L. C. L.)	ton	24.50	@
Ammonia carbonate	lb.	.12½	@$0.12¾
Asbestine	ton	13.00	@25.00
Aluminum silicate	ton	23.00	@25.00
Barium, carbonate (bbl.)	ton	54.00	@55.00
dust	lb.	.05	@
Barytes, imported	ton	30.00	@35.00
pure white	ton	30.00	@35.00
O.C.X., off color	ton		@
water ground and floated	ton	23.00	@26.00
Basofor	lb.	.04¼	@
Blanc fixe	lb.	.04	@ .04½
Carrara filler (factory)	lb.	.01¼	@ .02
Chalk, precip. extra light	lb.	.04½	@ .05
heavy (f.o.b. factory)	lb.	.03¼	@ .04
Clay, Dixie	ton	20.00	@35.00
Blue ribbon (C. L. facty.)	ton	14.00	@
Blue Ridge	ton	12.00	@24.00
Catalpo (facty.)	ton	38.00	@40.00
China	lb.	.01¼	@ .02½
China, L. H. B.	ton	13.00	@22.50
English, L. H. B.	lb.	.02½	@ .02¾
Langford	ton	12.00	@22.00
Cotton flock, black	lb.		@
light-colored	lb.		@
white	lb.		@
Cotton linters clean mill-run	lb.	.04½	@
Fossil flour (powdered)	ton		@
(bolted)	ton		@
Glue, high grade	lb.	.21	@ .29
medium	lb.	.19	@ .25
low grade	lb.	.14	@ .18
Graphite, flake	lb.	.06½	@ .12
Infusorial earth (pow'd)	lb.	.03½	@
(bolted)	ton		@
Lime (bolted)	lb.	.01½	@ .02
Mica, amber	lb.	.05	@
powdered	lb.		@
white	lb.		@
Pumice stone, powd.	lb.	.03	@ .05
Rotten stone (bbls.)	lb.	.02½	@ .04½
Slate flour (facty.)	ton	8.50	@15.00
Soap bark, cut	lb.	.09½	@ .10
Soapstone	ton	15.00	@25.00
Sodium bicarbonate (bbls.) 100 lbs.		2.00	@
Starch, powd. corn (bbls.) 100 lbs.		4.34	@ 4.44
Buffalo (bags)		4.07	@ 4.17
Talc, soapstone	ton	15.00	@22.00
Terra blanche	ton	23.00	@25.00
Whiting, domestic No. 33	ton	10.00	@
chalk, L. H. B.	ton	16.00	@25.00
commercial (facty.) 100 lbs.		.90	@ 1.60
English, imported	lb.	.01¼	@
English, cliffstone (factory) 100 lbs.		1.50	@ 2.00
Georgia calcite	ton		@
gilders (bolted) 100 lbs.		1.25	@ 1.35
Nelco	ton	11.00	@22.50

Chemical Market—*Continued*

New York Quotations

January 27, 1925

Perfection	ton	$13.00	@$15.00
Quaker	ton	13.00	@15.00
Snowflake white	ton		@
Superfine	ton		@
Sussex	ton	8.00	@10.00
Witco (C. L.)	ton	12.00	@
York	ton	8.00	@
Wood pulp, XXX (facty.)	ton	35.00	@
X (facty.)	ton	25.00	@

Mineral Rubber

Genasco (facty.)	ton	50.00	@52.00
Gilsonite	ton		@
Granulated M. R.	ton	35.00	@45.00
Hydrocarbon, hard	ton	29.00	@35.00
Hydrocarbon, soft	ton	29.00	@35.00
Ohmlac Kapak, K-R	ton	30.00	@60.00
K-4	ton	175.00	@
320/340 m. p. hydrocarbon	ton	47.00	@52.00
300/310 m. p. hydrocarbon	ton	42.00	@47.00
Pioneer, M. R., solid (fac.)	ton	42.00	@44.00
M. R. granular	ton	52.00	@54.00
Robertson, M. R., solid, (facty.)	ton	00'57	@ 00'55
M. R. (gran. facty.)	ton	42.00	@80.00
Rubrax (facty.)	ton	60.00	@
Synpro, gran. M. R. (facty.)	ton		@

Resins and Pitches

Tar, pine, retort	bbl.	13.50	@14.00
kiln	bbl.	12.50	@15.00
Pitch, Burgundy	lb.	.06½	@
coal tar	ton	28.00	@
Fluxol hardwood	lb.	.02	@ .04
pine tar	bbl.	7.00	@
ponto	lb.	.06½	@
Rosin, K (bbl.) 280 lbs.		8.85	@
strained (bbl.) 280 lbs.		8.70	@
Shellac, fine orange	lb.	.66	@ .67
substitute	gal.	1.50	@
Peanut, crude	lb.	.14	@
refined	lb.	.17	@
Petrolatum, standard	lb.	.06	@ .08
Petrolatum, sticky	lb.	.08	@ .10
Pine, steam distilled	gal.	.68	@ .70
Rapeseed, refined	gal.	1.05	@
blown	gal.	1.15	@
Rosin	gal.	.49	@ .50
Soya bean	lb.	.13½	@
Tar	gal.	.28	@ .38
Woburn	lb.	.05	@

Oils (Softeners)

Avoilas compound	lb.	.12	@ .13
Castor, No. 1, U. S. P.	lb.	.17½	@
No. 3, U. S. P.	lb.	.17	@
Corn, crude (bbls.)	lb.	.13	@
Cotton, Summer yellow	lb.	.13	@
Cycline	gal.	$0.35	@ .38
Glycerine	lb.	.19	@ .19½
Linseed, raw	gal.	1.22	@
Liquid rubber	lb.	.11	@
Palm lagos	lb.	.11½	@
clarified	lb.	.09½	@ .10
Palm, niger	lb.	.11	@
Parra M. R. flux	lb.	.06	@ .07

Solvents

Acetone (98.99%, [6.62 lbs. gal.])	lb.	.12	@ .12½
Benzol (90%, 7.21 lbs. gal.) pure	gal.	.25	@ .30
Carbon bisulphide (10.81 lbs. gal.)	lb.	.06½	@ .07½
tetrachloride (13.28 lbs. gal.)	lb.	.06¾	@ .07¾
Gasoline			
No. 303			
Tankcars	gal.	.20½	@
Drums, C. L.	gal.	.23½	@
Drums, L. C. L.	gal.	.26½	@
Motor gas (steel bbls)	gal.	.17	@
Naphtha, V. M. & P.	gal.	.16½	@
68° Bé., 122°, 324°	gal.	.17	@
70° Bé., 114°, 314°	gal.	.18	@
71° Bé., 112°, 304°	gal.	.19	@
Turpentine, spirits	gal.	.96	@
wood, steam distilled	gal.	.86	@

Substitutes

Black	lb.	.08	@ .15
Brown	lb.	.10	@ .15
White	lb.	.09	@ .15
Brown factice	lb.	.09	@ .18
White factice	lb.	.09	@ .16

Vulcanizing Ingredients

Black hypo	lb.	.18	@
13% F. S.	lb.	.20	@
Sulphur chloride (drums)	lb.	.04½	@ .05
Sulphur, Bergenport brand, 100% pure (C.L.) 100 lbs.		2.35	@ 2.60
(L.C.L.) 100 lbs.		2.65	@ 2.90
Sulphur, Brooklyn brands			
Refined velvet (bbls.) 100 lbs.		2.60	@ 3.15
(bags) 100 lbs.		2.35	@ 2.90
Superfine flour (bbls.) 100 lbs.		2.40	@ 2.90
(bags) 100 lbs.		2.00	@ 2.50
Rubber makers 100 lbs.		3.25	@ 3.75

(See also Colors—Antimony)

Waxes

Wax, beeswax, white, com.	lb.	.50	@ .55
ceresine, white	lb.	.10	@ .11
carnauba	lb.	.24½	@ .25
montan	lb.	.06	@ .06¼
ozokerite, black	lb.	.24	@ .25
green	lb.	.26	@ .30

Paraffin

122/124 white crude scale	lb.	.06	@
124/126 white crude scale	lb.	.06¼	@
120/122 fully refined	lb.	.06¾	@
125/127 fully refined	lb.	.06½	@

Automatic Wheel Aliner

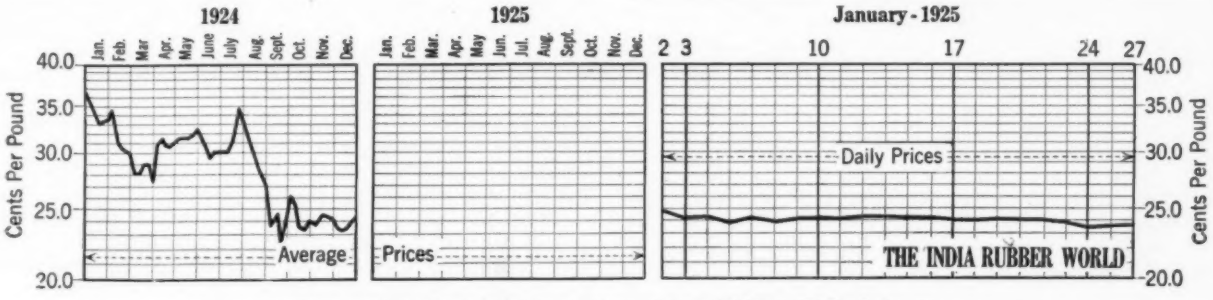
Tires are now sold strictly on their merits. If they are to excel in service they must be mounted on wheels checked for alinement. Balloon tires and four-wheel brakes require more careful attention in this particular to prevent premature wear than the former ordinary tire and brake equipment. In point of fact it is as essential to full tire service to have a proper wheel alinement on a car as to have a smooth running motor, because unless the wheels are lined up tire trouble, expense, and steering difficulties are inevitable.

There are many causes for misalinement. Among them can be mentioned bent axles, worn or defective spindles or spindle bolts and bushings, and loose, worn or defective wheels, tie rods, etc. Some of these things come from ordinary operation and some from shocks and strains—hitting ruts, jamming curbs, quick hard turns, etc.

The need of maintaining proper pitch alinement and "toe-in" of automobile wheels is evident from the statement that a 30 by 3½ tire when less than an inch out of line will drag 174 feet of every mile traveled. The aliner here pictured is practically two devices in one, the pitch and toe-in working together, so that the adjustment in each is made in correct relation to the other. The aliner is simple in construction. Its dials are easily read and in connection with the arrow pointers they show when the alinement is correct. This is said to be the only device that determines pitch is most essential, but is the Correctness of most neglected. Pitch and toe-in work automatically together and both should be correct.

Bear Automatic Wheel Aliner

The aliner has the important incidental value that it detects defective wheels, spindles, bolts, bushings, tie rods and axles, swung rear end or sprung chassis.—Bear Manufacturing Co., Rock Island, Illinois.



Ratio Graph of New York Daily Prices of Spot Middling Upland Cotton

The Market for Cotton and Other Fabrics

New York

AMERICAN COTTON. At the close of the year fluctuations in the cotton market were comparatively narrow. The record of ginnings indicates that the season's crop will be around 13,500,000 bales. Interest is already being shown in the probable size of the next crop. With cotton available at reasonable prices it is considered possible that the world's spinners this season may take nearly a million bales more than the seasonal consumption to replenish their reserve stocks.

The three principal factors bearing on the new crop outlook are the insufficient moisture in the southwestern states, doubt of maintenance of last season's acreage, and the possibility of greater boll weevil damage.

The cotton trade at large believes that the market will tend toward lower levels in spite of the counteracting influences of larger cotton consumption and the usual chances against the 1925 crop.

ARIZONA COTTON. The Arizona Pima crop is practically all marketed and has ceased to be a factor in the extra staple situation. There are a few bales of Sea Islands still available but this growth has practically disappeared from the commercial markets.

EGYPTIAN COTTON. Egyptian cotton, both Uppers and Sakels, has continued near the peak for the present crop, medium grade Uppers being worth 39 to 40 cents and Medium Sakels from 60 to 62 cents. The extreme prices of Sakels have caused a cessation in buying interest but, apparently, there is still a large enough short interest to maintain values. Uppers, on the other hand, particularly the better grades, are being steadily taken at present prices and are being substituted abroad for medium and low grade Sakels.

Cotton Fabrics

DUCKS, DRILLS AND OSNABURGS. Interest in these goods held to the close of the year. During the past month the market has been firm and the consuming demand very good. Fabrics are in very limited supply as to spot stocks or for quick delivery.

RAINCOAT FABRICS. During January business continued good at firm and unchanged prices.

SHEETINGS. The mills are holding their prices firm and are not at present willing to make any concessions. There are no large sales and most buying is of the hand to mouth order, making business rather quiet.

TIRE FABRICS. The tire fabric market closed the year quietly with the mills in good position in regard to future operations. Early in the month the beginning of a better market developed. The principal demand is for standard carded peeler American grades for January-March delivery. The scarcity of long staple cotton makes the tire fabric outlook somewhat uncertain.

It is estimated that tire makers have bought so far this year 10,000,000 pounds of tire fabrics of all grades to meet their manufacturing needs for the first quarter year. There is the prospect that as dealers increase their demands upon the tire trade manufacturers will find it necessary to cover on additional quantities of fabric.

The fabric trade has found considerable stabilization in the quality standard of carded peeler cords. The demand is for the 25s, three ply, 20s for filling and 5 to the inch.

New York Quotations

January 26, 1925

Drills

38-inch 2.00-yard	yard	$0.21½@
40-inch 3.47-yard		.12½@
52-inch 1.90-yard		.23¼@
60-inch 1.52-yard		.30¼@

Duck

38-inch 2.00-yard	yard	.23 @
40-inch 1.47-yard		.31 @
72-inch 16.66-ounce		.52 @
72-inch 17.21-ounce		.53⅞@
MECHANICAL		
Hose	pound	.45 @
Belting		.44 @
TENNIS		
52-inch 1.35 yard	yard	.36 @

Hollands

DEAD FINISH		
Standard, 37-inch	yard	.19½@
42-inch		.23½@
FLAT FINISH		
Imperial, 36-inch		.15½@
40-inch		.17½@
RED SEAL		
36-inch		.18 @
40-inch		.19 @
50-inch		.50 @

Osnaburgs

40-inch 2.35-yard	yard	.19¼@
40-inch 2.48-yard		.18¼@
40-inch 3.00-yard		.15 @
37-inch 2.42-yard		.18¾@

Raincoat Fabrics

COTTON		
Bombazine 64 x 60	yard	.12½@
Bombazine 60 x 48		.11½@
Plaids 60 x 48		.12½@
Plaids 56 x 54		.12 @
Surface prints 60 x 48		.12½@
Surface print 64x60		.13½@

Sheetings, 40-inch

48 x 48, 2.50-yard	yard	.16¼@
48 x 48, 2.85-yard		.14½@
64 x 68, 3.15-yard		.14⅝@
56 x 60, 3.60-yard		.12¼@
48 x 44, 3.75-yard		.11¼@

Sheetings, 36-inch

48 x 48, 5.00-yard	yard	$0.09 @
40 x 40, 6.15-yard		.07¼@

Tire Fabrics

SQUARE WOVEN 17¼-ounce		
Egyptian, karded	pound	.72 @$0.73
Peeler, karded		.54 @ .55
CORD 23/5/3		
Egyptian, combed	pound	.82 @ .84
Egyptian, karded		.73 @ .74
Peeler, combed		.67 @
Peeler, combed, 1 1/16-in.	pound	.61 @ .62
Peeler, karded		.55 @ .56
CORD 13/3/3		
Peeler, karded	pound	.53 @ .54
LENO BREAKER		
8-oz. Peeler, karded	pound	.53 @ .54
10-oz. Peeler, karded		.53 @ .54
CHAFER		
8.25-oz. Peeler, karded	pound	.50 @ .55
9.5-oz. Peeler, karded		.53 @ .54
12-oz. Peeler, karded		.53 @ .54
14-oz. Peeler, karded		.53 @ .54

The Cotton Outlook

Largest World Crop in Nine Years

THE world's largest cotton crop in nine years is estimated for the 1924-1925 season in figures issued by the United States Department of Agriculture. Based on reports from countries producing about 96 per cent of the world's cotton, the world crop for the season is estimated at 22,211,000 bales of 478 pounds net, as compared with 17,928,000 bales last year, and a pre-war average (1909-1913) of 22,718,000 bales. Estimates have been received from all the principal producing countries except Brazil.

Should the countries producing the other 4 per cent of the world's cotton provide the same as last year, it is estimated that the total world crop will be about 23,300,000 bales, as compared with 19,300,000 bales last year and a pre-war average (1909-1913) of 23,580,000 bales.

The indicated world supply of American cotton for the 1924-1925 season, based on official production figures and trade estimates of carryover, approximates about 16,080,000 bales. If this estimated carryover figure is approximately correct, the total supply of American cotton for 1924-1925 would be somewhat larger than the official estimate for last year, and slightly larger than for 1922-1923, but smaller than for 1921-1922.

Consumption and Exports

Consumption rather than production now becomes the main factor in the cotton outlook. The increased supply of cotton had not up to the end of November resulted in an increased United States consumption. The total consumption for the four months ended with November amounted to only 1,818,000 bales of lint cotton this year, compared with 2,054,000 bales for the same period of 1923. Increasing mill operation was expected to increase consumption materially, but strikes following general wage cuts are temporarily preventing this.

The decrease in domestic consumption is more than offset, however, by increased exports. At the close of the calendar year exports for the cotton year, which begins August 1, were very close to a million bales in excess of those for the same period of 1923, or an increase of some 30 per cent. This has occurred despite the substantial output of every cotton producing country, and at a price level which, although about 11 cents below a year ago, still gives the American producer a reasonable profit.

Confidence is the keynote of reports from all the principal cotton consuming countries of the world. In most of them mill activities are on the increase and it is even admitted that prices are reasonable. The outlook for the balance of the cotton year is therefore for continued heavy exports of American cotton. Total consumption of American this season is estimated by Reiss Brothers, cotton merchants, Liverpool, England, at 12,750,000 to 13,000,000 bales, or an increase of 10 to 15 per cent over last year. Of this, from 6,000,000 to 7,000,000 bales are likely to be used by American mills.

A Good 1925 Crop Needed

The large 1924 crop has brought a return to more normal conditions in the trade generally. It has restored a working equilibrium between supply and demand for current requirements, eliminating the element of chance from the market to a large extent, and it has allayed the fears of an immediate shortage in the world's cotton needs, which has been the dominating feature for the past several years.

Edward E. Bartlett, president of the New York Cotton Exchange, points out, however, that in view of the large exports it is unlikely that the probable carryover will be large enough to minimize the importance of raising another large American crop this year. If the South produces such a crop it will go far toward putting the cotton industry on its feet. Lower prices will increase world consumption and bring prosperity to the industry generally. The mills have apparently turned the corner and are rapidly getting into a position to do a profitable business. It is believed that this will be a good mill year.

President Bartlett makes it plain that the satisfactory crop of 1924 and the fairly good season enjoyed by cotton farmers gives no assurance that they will continue to raise a good crop in this and succeeding years. It must be remembered, he says, that 1924 was an off-weevil year, due to ideal weather conditions, the planting of a large acreage, and elaborate weevil precautions. But it has been demonstrated that there is a tendency on the part of the farmers to slow down in their precautions the following year with disastrous results. It is to be hoped, therefore, that the boll weevil control campaign of the American Cotton Association will be more extensive and effective this year than ever before.

The American Mill Situation

Conditions in the American mill situation at present are rather complex. Because of the close balance now existing between supply and demand, there should be no acute change in raw material prices if there is no change in the rate of demand.

The building up of surplus stocks by manufacturers, however, is a problem that should be approached with due consideration. It is fully as important in the long run as obtaining raw material for current requirements. Census reports show that mill stocks, both in America and abroad, are abnormally light. According to the New York Cotton Exchange over 10,200,000 bales, or considerably more than two-thirds of the 1924 crop, has moved into sight, and over three-fourths of it has left the hands of the producer. It would hardly seem that the balance would greatly influence prices.

Asserting that mill requirements constitute a tremendous short interest, C. T. Revere, the well-known cotton economist, predicts that if industry improves as indicated likely by advances in the stock and bond market, it is entirely possible that the textile industry may wake up to find a sudden boom which would sweep the reluctant jobber and retailer into the market. This in turn could easily swing the mill men into the raw market to bid for stocks. What would happen then is obvious. If this sudden movement can be eliminated, if quickening demand can be modulated to an orderly pace, mills will experience less difficulty in keeping stocks up to requirements.

The Scarcity of Extra Staple Cotton

The demand for extra staple cottons has become so insistent that many interpret it as reflecting an oversold condition. Nothing comparable has been experienced since 1919 and the early months of 1920 when extra staples commanded fabulous premiums.

Opinions vary widely as to the supply of extra staples, and no accurate official records are available. Most of the growth of 1923 has passed into consumption, but the quantity produced that year is unknown. Memphis handlers of extra staples estimate the 1924 growth of full 1⅛-inch staples all the way from 600,000 to 1,500,000 bales, and commitments already entered upon or fulfilled at 700,000 to 1,000,000 bales.

After a careful analysis of all available data, George L. Fossick, Memphis correspondent of the *Textile World*, estimates the total American production of extra staple cotton for 1924 at 1,000,000 to 1,100,000 bales, of which fully 80 per cent was 1¼ and 1⅛ to 1 3/16-inch. Certain it is that the Pima crop has been reduced to a few thousand bales, that the domestic Sea Island crop has gone, probably never to return, and that the Delta crop of cotton longer than 1 3/16-inch has been greatly reduced.

Whatever the actual totals may be, it seems reasonably certain that if the demand were to be as large this season as last the

supply would prove inadequate and prices would rise correspondingly. Although both supply and demand are still problematical it seems likely that reduced consumption will approximately offset the reduced supply, or that wider use of Egyptian Uppers will be resorted to.

Unfortunately, however, the Egyptian Sakelaridis crop is not expected to be larger than last season and the apparently well confirmed reports of fraud in connection with it are not encouraging its substitution. It appears that much of the shorter and poorer Pillion is being mixed with Sakelaridis at the gins and that the supply of straight Sak deliverable against future contracts and type samples is being seriously restricted.

In the apparent emergency it is fortunate that the tire trade is no longer demanding extra staples and other longer cottons, and that demand for extra yarns and cloths requiring these long staples is more restricted than it has been for years, also that the tendency, even in the latter, is toward the use of shorter cottons.

AMERICAN FOOTWEAR EXPORTS INCREASING

United States exports of rubber boots and shoes are increasing. For the first ten months of 1924, 484,215 pairs of rubber boots, value $1,199,662, were exported, as compared with 241,919 pairs, value $630,549, for the entire year 1922. During this ten months period there were exported from the United States 1,440,687 pairs of rubber shoes, value $1,189,055, as compared with 1922 shipments, totaling 863,559 pairs, value $751,486.

The most important development is the trade with England, whose imports of rubber boots and shoes now far surpass those of Japan, in recent years our best customer. During the year 1922 England's purchases from the United States of this class of goods totaled only 47,691 pairs of rubber boots, value $93,344, and 64,130 pairs of rubber shoes, value $53,897, while Japan took 74,784 pairs of rubber boots, value $181,584, and 142,678 pairs of rubber shoes, value $123,014. During the year 1924, however, England took during a period of ten months 173,744 pairs of rubber boots, value $471,408, as compared with Japan's purchase of 55,867 pairs, value $113,854, England also buying 243,464 pairs of rubber shoes, value $161,084, Japan's share being 107,695 pairs, value $98,636. One of the largest single purchases of the year 1924 was by Japan, that country taking in January 47,548 pairs of rubber shoes, value $42,219. In July Austria also took 31,814 pairs of such shoes, value $34,510. Other countries taking during 1924 amounts of varying importance have been Denmark, Norway, Switzerland, Sweden, Newfoundland and Labrador, Iceland and the Faroe Islands, Italy, Mexico, and Brazil. England's record purchase in September of 50,653 pairs of rubber boots, value $192,892, and 99,173 pairs of rubber shoes, value $66,996, outstrips, however, all others.

Switzerland's part in this trade should be especially noticed. During the year 1922 that country purchased from the United States only 44,093 pairs of rubber shoes, valued at $34,022, the importations rapidly rising, however, during the last half of 1923, making a total for the year of 183,212 pairs, value $124,113. A high figure is also being reached for 1924, chiefly due to the August purchase of these goods, which alone touched the highwater mark of 129,636 pairs, value $114,292. Switzerland's importations from the United States of these rubber shoes for the first ten months of the year 1924 reached a total of 198,321 pairs, value $168,469.

INCREASE IN TIRE EXPORTS TO PHILIPPINES

American exports to the Philippines of pneumatic casings for automobiles have already reached during the first ten months of 1924 a value of $551,290, as compared with $565,178, the corresponding value for the entire year 1922. Inner tube importations from the United States were estimated at $86,788 for 1922, and at $70,227 for the ten months period of 1924. Solid tire values have increased from $79,294 in 1922 to $100,486 for 1924.

Metal Market Review

New York

All the markets, with the possible exception of tin, have shown pronounced strength during January. Lead values have continued to advance, prices for copper remained firm, while the zinc market is again strong and higher.

ALUMINUM. There seems to be expectancy of price advances for this metal. Considerable inquiry for secondary and remelted metal is being made at firm prices by parts and accessory manufacturers.

ANTIMONY. The price of antimony took a decided jump during the middle of the month, London quotations showing a rise of £4 in a week, while a similar advance occurred the week previous. Because of civil war troubles mining operations in China have practically ceased.

COPPER. Statistics show that at the present time the world consumption of copper is exceeding world output by 15,000,000 to 20,000,000 pounds a month. According to executives of the Anaconda Copper Mining Co., American consumption of copper has jumped from 759,701,357 pounds annually in the two years before the war to about 1,520,000,000 pounds in 1924, an increase of practically 100 per cent. Meanwhile world consumption has increased from 2,109,510,000 pounds to 3,000,000,000 pounds, an expansion of consumption in the rest of the world of about 15 per cent.

LEAD. There is a scarcity of this metal, and large users are meeting with difficulty in finding a substitute. Lead quotations are not far from the record price reached during the war, of 11½ cents a pound.

NICKEL. The spot market is around 30 cents, and contracts are being placed at from 28 cents upward.

STEEL. Operations throughout the country are at fully 85 per cent of capacity, while the firmer tone in all finished steel markets which developed in December is still in evidence. During 1924 the railroads represented the heaviest consumers of finished steel, taking 27½ per cent of the total American output, the second largest consumer being the structural industry, which took 17.86 per cent.

TIN. The market shows little activity in spite of the fact that prices are the lowest for several weeks. Domestic prices remain unchanged at 57 cents for Straits tin.

ZINC. During the latter part of January the prices for Prime Western at 7.87½ to 7.90 cents, St. Louis, and 8.22½ to 8.25 cents, New York, represented a higher figure than any reached during 1924.

Basic Metals

January 24, 1924

	Cents per pound
Aluminum, virgin, 98@99 per cent	27.00 @28.00
Antimony	16.75 @17.00
Copper—Lake, spot	15.00 @15.125
Electrolytic, spot	14.875 @15.00
Casting refinery	14.125 @
Lead, spot, New York	10.00 @
Lead, spot, East St. Louis	9.75 @10.00
Nickel, ingot, pound	31.00 @32.00
Tin, spot	57.625 @
Zinc, spot, New York	7.90 @ 7.925
Zinc, spot, East St. Louis	7.55 @ 7.575

Steel Wire

BASE PRICE* ON NO. 9 GAGE AND COARSE

	Cents per pound
Bright basic	4.25 @ 4.50
Annealed soft	4.50 @ 4.75
Galvanized annealed	5.15 @ 5.40
Coppered basic	5.15 @ 5.40
Tinned soft Bessemer	6.15 @ 6.40

* Regular extras for lighter gage.

Copper Wire

Base price F. O. B. factory

	Cents per pound
Bare copper wire	17.375 @
No. 6 B. & S. gage	17.375 @
No. 8 B. & S. gage	17.375 @
No. 14 B. & S. gage	18.375 @

Exports of India Rubber Manufactures from the

EXPORTED TO	Belting Value	Hose Value	Packing Value	Thread Value	Boots Pairs	Boots Value	Shoes Pairs	Shoes Value	Canvas Shoes with Rubber Soles Pairs	Canvas Shoes with Rubber Soles Value	Soles and Heels Value	Waterproofed Auto Cloth Value	Waterproofed Clothing Value
EUROPE													
Austria	.....	.....	.....	.....	.....	.....	69	$88	.....	.....	.....	.....	.....
Azores and Madeira Is.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belgium	$402	$245	$154	.....	996	$3,434	2,976	2,537	72	$35	.....	$2,782	$124
Bulgaria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Czechoslovakia	.....	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Denmark	2,188	554	554	.....	7,316	18,039	20,507	12,201	979	1,600	$1,316	446	104
Esthonia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Finland	1,925	123	.....	.....	.....	.....	.....	.....	.....	.....	14	206	.....
France	585	283	2,562	$49,450	3,029	6,046	1,140	575	340	293	132	206	145
Germany	.....	.....	186	24,106	2,493	6,087	2,779	3,476	148	170	270	.....	1,990
Gibraltar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Greece	.....	281	.....	.....	.....	.....	.....	.....	360	428	.....	1,042	25
Iceland and Faroe Is.	.....	.....	.....	.....	2,603	8,204	2,903	4,714	.....	.....	.....	.....	.....
Italy	.....	.....	.....	8,256	73	224	1,605	1,133	.....	.....	.....	230	8
Latvia	1,223	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Malta Gozo and Cyprus Is.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	326	.....
Netherlands	.....	43	105	.....	1,176	3,419	.....	.....	.....	.....	1,677	728	42
Norway	1,550	1,804	.....	.....	2,563	6,798	10,914	8,881	3,116	3,615	733	1,661	.....
Poland and Danzig	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portugal	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	976	530	.....
Rumania	.....	318	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Russia in Europe	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spain	484	.....	.....	13,063	327	796	48	42	48	55	175	485	.....
Sweden	2,735	880	102	1,857	1,729	5,231	1,490	2,389	12	18	225	217	705
Switzerland	.....	.....	.....	.....	47	158	696	1,154	120	291	215	992	.....
Turkey in Europe	.....	.....	.....	.....	.....	.....	41	31	.....	.....	.....	.....	.....
Ukraine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
England	24,499	12,309	15,213	29,041	54,459	103,255	62,574	37,860	2,429	2,417	2,425	18,119	3,591
Scotland	3,020	.....	147	.....	5,517	8,016	2,448	1,236	.....	.....	.....	316	497
Ireland	335	.....	.....	.....	170	271	360	172	.....	.....	.....	.....	.....
TOTALS, EUROPE	$38,978	$16,884	$19,023	$125,773	82,498	$169,978	110,550	$76,489	7,624	$8,922	$8,158	$28,286	$7,231
NORTH AMERICA													
Canada	$15,544	$6,305	$4,759	$11,872	2,782	$4,522	5,966	$4,469	.....	.....	$4,497	$33,316	$1,798
British Honduras	2	20	.....	.....	.....	.....	.....	.....	216	$140	37	.....	72
Costa Rica	85	829	31	.....	.....	.....	.....	.....	94	94	696	.....	74
Guatemala	104	459	95	.....	.....	.....	.....	.....	2,440	1,830	1,554	180	141
Honduras	97	452	534	.....	60	62	188	272	458	334	2,681	.....	720
Nicaragua	17	30	382	.....	.....	.....	498	449	2,308	1,968	26	29	.....
Panama	39	3,524	2,096	.....	12	40	216	216	677	793	321	.....	258
Salvador	.....	358	47	38	.....	.....	.....	.....	1,228	765	7,191	592	.....
Mexico	13,439	16,148	5,340	48	213	619	673	504	8,366	6,924	10,048	1,683	3,257
Miquelon and St. Pierre Is.	.....	.....	.....	.....	384	947	1,219	519	.....	.....	.....	.....	.....
Newfoundland & Labrador	327	117	42	.....	5,233	8,760	3,462	2,858	401	405	896	.....	5,503
Bermuda	.....	102	.....	.....	115	359	11	8	265	344	95	.....	.....
Barbados	.....	.....	.....	.....	.....	.....	.....	.....	144	181	.....	166	.....
Jamaica	.....	188	502	.....	.....	.....	72	40	4,109	2,859	1,052	1,246	77
Trinidad and Tobago	.....	15	84	.....	.....	.....	.....	.....	36	31	233	240	.....
Other Brit. West Ind.	.....	429	117	.....	.....	.....	24	16	1,842	1,535	63	24	40
Cuba	4,977	12,237	13,820	.....	48	162	1,654	1,017	72,433	43,001	5,861	5,895	6,340
Dominican Republic	.....	340	1,151	.....	.....	.....	288	205	12,037	8,510	292	.....	281
Dutch West Indies	.....	28	.....	.....	.....	.....	.....	.....	11,635	8,299	152	.....	467
French West Indies	82	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Haiti	16	.....	14	.....	.....	.....	36	30	1,376	917	49	38	.....
Virgin Islands of U. S.	.....	.....	.....	.....	.....	.....	.....	.....	189	238	50	.....	.....
TOTALS, NORTH AMERICA	$34,729	$41,581	$29,014	$11,958	8,847	$15,471	14,307	$10,603	120,254	$79,168	$35,794	$43,409	$19,028
SOUTH AMERICA													
Argentina	$1,247	$5,370	$1,366	.....	24	$100	1,008	$501	150,790	$79,389	$3,907	$22,421	.....
Bolivia	2,846	.....	.....	.....	.....	.....	150	96	312	282	258	.....	.....
Brazil	19,964	4,407	710	.....	90	572	.....	.....	.....	.....	.....	2,967	$340
Chile	4,881	1,764	3,058	.....	.....	.....	.....	.....	.....	.....	729	1,451	.....
Colombia	1,308	3,122	672	$65	.....	.....	152	119	3,247	2,470	6,869	1,142	539
Ecuador	.....	235	.....	.....	.....	.....	1,013	772	5,074	2,823	579	.....	478
British Guiana	57	600	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dutch Guiana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	121	57	.....
Paraguay	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	243
Peru	828	1,080	386	.....	123	698	21	55	1,092	1,239	164	89	.....
Uraguay	565	211	95	.....	.....	.....	.....	.....	21,444	14,807	.....	1,162	62
Venezuela	248	766	1,724	.....	.....	.....	286	295	480	294	480	60	.....
TOTALS, SOUTH AMERICA	$31,944	$17,555	$8,011	$65	237	$1,370	2,630	$1,838	182,439	$101,304	$13,107	$29,349	$1,662
ASIA													
Aden	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British Indies	$590	$1,242	.....	.....	.....	.....	.....	.....	1,606	$1,129	.....	$206	.....
Ceylon	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	685	.....
Straits Settlements	.....	80	.....	.....	.....	.....	.....	.....	1,335	1,003	.....	1,752	.....
China	2,071	1,307	$227	.....	840	$1,680	11,194	$7,770	.....	.....	.....	579	$11
Chosen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Java and Madura	4,176	1,564	1,078	.....	.....	.....	48	40	5,760	7,717	$36	3,224	.....
Other Dutch East Ind.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
French Indo-China	.....	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hejaz, Arabia, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hongkong	.....	579	.....	.....	.....	.....	105	110	96	86	.....	246	650
Japan	3,456	8,040	4,896	1,775	.....	.....	816	490	.....	.....	.....	3,075	.....
Kwangtung, leased territory	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	501	.....
Palestine & Syria	554	.....	.....	.....	.....	.....	192	87	.....	.....	.....	175	.....
Philippine Islands	2,698	6,544	1,277	.....	.....	.....	.....	.....	63,200	50,408	3,005	258	20
Siam	1,020	.....	.....	.....	.....	.....	.....	.....	12	25	.....	.....	.....
TOTALS, ASIA	$14,565	$19,379	$7,478	$1,775	840	$1,680	12,355	$8,497	72,009	$60,368	$3,041	$10,701	$681

United States by Countries During November, 1924

Pneumatic Casings			Solid Tires		Pneumatic Tubes				Hard Rubber Goods						
Automobile			Automobile and Motor Truck		Automobile										
Number	Value	Others Value	Value	Others Value	Number	Value	Others Value	Tire Repair Materials Value	Battery Jars and Accessories Value	Other Electrical Supplies Value	Others Value	Rubber Water Bottles and Fountain Syringes Value	Other Druggists' Rubber Sundries Value	Bathing Caps Value	Rubber Toys, Balls and Balloons Value
6	$105	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
70	1,369	.....	.....	.....	64	$99	.....	.....	.....	.....	.....	.....	.....	.....	.....
4,176	45,361	$278	.....	.....	3,527	4,361	$42	$423	.....	.....	.....	$318	$980	.....	$2,200
39	679	.....	.....	.....	127	192	.....	45	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
3,465	41,591	1,596	$1,043	.....	1,544	2,427	228	588	.....	.....	$12	.....	141	$401	180
220	3,376	.....	.....	.....	150	267	.....	129	.....	.....	.....	.....	.....	.....	.....
261	3,730	74	.....	.....	445	699	169	165	.....	.....	.....	.....	.....	.....	.....
5,142	54,163	317	.....	.....	4,913	6,281	33	7,843	$2,527	.....	12,587	383	457	532	321
185	3,089	.....	.....	.....	454	812	35	.....	.....	.....	.....	.....	204	.....	6,833
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	79
612	9,223	.....	1,017	$49	1,446	2,507	.....	418	.....	.....	.....	.....	.....	.....	.....
57	881	.....	.....	.....	53	83	.....	20	.....	.....	.....	.....	.....	.....	.....
603	8,488	.....	851	.....	668	1,512	280	324	.....	.....	.....	544	444	.....	.....
77	1,478	44	.....	.....	252	589	15	.....	.....	.....	.....	.....	.....	.....	.....
4	66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,800	17,792	825	1,023	.....	1,910	7,540	39	201	.....	.....	.....	.....	910	92	6,654
1,522	15,505	.....	3,763	.....	303	609	24	312	92	.....	.....	37	460	.....	324
6	116	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
304	3,503	.....	.....	.....	2,882	5,689	45	83	.....	.....	.....	.....	.....	.....	.....
395	3,800	.....	.....	.....	600	680	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	281	.....	.....	.....	5	17	.....	.....	.....	.....	.....	.....	.....	.....	.....
813	17,016	.....	2,951	.....	705	1,791	30	2,299	43	.....	17	939	246	.....	729
2,258	27,985	.....	3,236	.....	605	997	.....	527	.....	.....	.....	32	1,233	83	971
285	5,653	32	.....	.....	741	3,135	16	.....	.....	.....	60	147	953	.....	1,113
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36,899	.....	.....	.....	.....
13,452	135,316	.....	38,017	.....	6,079	10,156	.....	1,746	323	.....	.....	8,754	20,790	628	32,141
752	4,136	.....	.....	.....	10	58	.....	.....	.....	.....	.....	.....	.....	.....	156
101	626	.....	.....	.....	187	211	.....	.....	.....	.....	.....	.....	.....	.....	.....
36,622	$405,328	$3,166	$51,901	$49	27,670	$50,712	$956	$15,123	$2,985	.....	$49,575	$11,154	$26,818	$1,736	$51,751
7,888	$69,867	$782	$7,221	$262	7,509	$9,762	$41	$4,330	$3,975	$1,965	$17,809	$795	$12,252	$113	$7,043
14	144	.....	.....	.....	20	29	.....	.....	.....	.....	.....	.....	2	.....	16
90	1,801	.....	.....	.....	53	85	.....	19	.....	3	81	136	37	36	927
115	2,114	.....	116	164	127	259	.....	10	.....	.....	41	.....	138	6	.....
215	3,192	.....	512	.....	346	614	.....	.....	.....	.....	25	93	97	.....	10
145	945	88	100	.....	225	432	.....	.....	.....	.....	.....	.....	144	.....	124
1,430	14,240	470	1,380	270	530	826	13	60	.....	50	379	.....	235	112	244
308	5,619	12	1,069	.....	397	884	.....	370	.....	.....	.....	.....	114	.....	232
7,940	79,184	756	3,608	791	6,023	9,816	50	2,093	.....	589	3,356	376	4,810	58	7,723
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	610	.....	.....	61	44	64	.....	77	.....	.....	.....	54	176	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
28	265	.....	124	.....	36	53	.....	6	.....	.....	.....	.....	.....	.....	44
642	9,783	28	683	394	237	562	.....	151	.....	1	128	.....	.....	.....	149
171	2,222	.....	166	.....	49	86	.....	.....	.....	.....	.....	.....	48	.....	57
175	2,430	.....	.....	.....	93	204	.....	.....	.....	.....	.....	.....	.....	27	11
4,522	46,537	203	24,356	2,886	6,027	8,679	50	3,271	713	19	377	547	3,714	164	3,198
1,264	13,208	334	3,010	113	1,506	2,397	210	93	.....	.....	3	8	181	.....	1,468
236	2,588	.....	.....	.....	330	612	.....	64	.....	.....	31	.....	.....	.....	26
4	82	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
152	2,575	45	.....	174	222	509	31	162	.....	.....	.....	.....	228	.....	81
78	938	60	22	.....	36	75	.....	17	.....	.....	.....	2	.....	.....	24
25,440	$258,344	$2,778	$42,367	$5,114	23,810	$35,948	$395	$10,663	$4,685	$2,627	$22,230	$1,911	$22,176	$516	$21,416
12,713	$127,350	$118	$12,873	$36	14,091	$20,057	$9	$1,573	.....	.....	$400	.....	$3,015	$988	$1,464
48	878	.....	.....	.....	54	135	.....	25	.....	.....	.....	.....	44	.....	30
4,722	36,269	29	1,905	.....	4,110	3,542	4	3,273	.....	.....	403	$752	627	.....	361
812	15,012	.....	.....	922	333	713	.....	195	.....	$471	.....	81	.....	.....	1,564
572	11,527	28	4,899	93	662	1,280	.....	76	.....	.....	878	173	639	68	853
127	2,493	.....	417	.....	138	301	.....	.....	.....	.....	.....	.....	.....	.....	408
12	146	.....	.....	.....	60	69	.....	21	.....	.....	.....	.....	.....	.....	524
12	137	.....	.....	.....	34	60	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
881	18,375	11	2,749	.....	1,147	2,699	162	109	.....	107	121	76	912	76	678
1,582	17,516	.....	94	.....	723	2,565	52	1,074	.....	.....	.....	154	719	397	286
1,707	23,657	140	141	256	2,829	5,392	92	182	.....	.....	300	219	453	.....	.....
23,188	$253,360	$326	$23,078	$1,307	24,181	$36,813	$319	$6,523	.....	$578	$2,102	$1,455	$6,409	$1,529	$6,168
24	$252	.....	.....	.....	24	$30	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,957	24,538	.....	$3,064	$2,016	1,228	1,948	.....	$129	.....	.....	.....	$165	$7	.....	$2,696
70	1,619	.....	.....	527	99	364	.....	.....	.....	.....	.....	.....	.....	.....	.....
1,670	16,181	$288	4,716	.....	1,654	2,417	.....	216	.....	.....	.....	.....	.....	.....	107
829	10,723	.....	557	.....	923	1,162	.....	102	$291	.....	$42	9	343	.....	487
237	2,198	.....	.....	.....	234	495	.....	27	.....	.....	.....	315	136	.....	.....
1,437	15,450	492	5,400	605	48	211	.....	743	.....	.....	.....	.....	.....	$54	.....
119	1,481	.....	.....	.....	100	215	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
48	1,936	.....	.....	.....	46	103	.....	.....	.....	.....	.....	.....	.....	.....	36
5	103	.....	130	.....	5	17	.....	.....	.....	.....	.....	50	.....	.....	.....
4,506	35,760	170	3,315	.....	3,026	3,911	.....	235	.....	.....	2,790	24	1,897	54	1,464
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	202
250	3,759	.....	39	.....	187	460	.....	.....	.....	.....	.....	.....	389	.....	.....
1,986	22,701	974	6,160	6,928	1,512	2,732	$349	509	.....	.....	.....	206	1,820	.....	653
72	1,189	.....	.....	.....	.....	.....	.....	58	.....	.....	.....	.....	.....	.....	925
13,210	$137,890	$1,924	$23,381	$10,076	9,086	$14,065	$349	$2,019	$291	.....	$2,832	$769	$4,592	$108	$6,579

Exports of India Rubber Manufactures from the

EXPORTED TO	Belting Value	Hose Value	Packing Value	Thread Value	Boots Pairs	Boots Value	Shoes Pairs	Shoes Value	Canvas Shoes with Rubber Soles Pairs	Canvas Shoes with Rubber Soles Value	Soles and Heels Value	Waterproofed Auto Cloth Value	Waterproofed Clothing Value
OCEANIA													
Australia	$13,335	$8,772	$5,455	.....	720	$2,276	149	$131	.....	.....	$430	$12,262	.....
British Oceania	.....	.....	.....	.....	.....	.....	.....	.....	265	$249	.....	.....	$33
French Oceania	.....	54	.....	.....	.....	.....	.....	.....	1,895	1,751	54	.....	.....
New Zealand	389	4,152	2,107	.....	.....	.....	.....	.....	.....	.....	.....	447	14
Other Oceania	.....	.....	.....	.....	.....	.....	.....	.....	794	804	16	.....	.....
TOTALS, OCEANIA	$13,724	$12,978	$7,562	.....	720	$2,276	149	$131	2,954	$2,804	$500	$12,709	$47
AFRICA													
British West Africa	.....	$97	.....	.....	.....	.....	.....	.....	.....	.....	.....	$69	.....
British South Africa	$5,576	13,414	$2,685	$122	.....	.....	.....	.....	658	$862	$1,183	1,250	$18
British East Africa	522	287	113	.....	.....	.....	.....	.....	9	15	.....	.....	.....
Canary Islands	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	189	.....	.....
Egypt	70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other French Africa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Madagascar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portuguese East Africa	2,079	.....	571	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other Portuguese Africa	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
TOTALS, AFRICA	$8,247	$13,798	$3,769	$122	.....	.....	.....	.....	667	$877	$1,372	$1,319	$18
GRAND TOTALS	$142,187	$122,175	$74,857	$139,693	93,142	$190,775	139,991	$97,558	385,947	$253,443	$61,972	$125,773	$28,667

Rubber Statistics for the Dominion of Canada

Imports of Crude and Manufactured Rubber

UNMANUFACTURED	October, 1924 Pounds	October, 1924 Value	Seven months Ended October, 1924 April-October Pounds	Seven months Ended October, 1924 April-October Value
Rubber, gutta percha, etc., From United Kingdom	55,718	$14,119	3,252,273	$840,512
United States	1,776,569	439,058	12,318,315	2,796,335
Belgium	.....	.....	50,122	11,393
Ceylon	.....	.....	.....	.....
Straits Settlements	282,996	69,336	1,329,819	287,415
Dutch East Indies	.....	.....	78,474	19,855
France	.....	.....	.....	.....
Netherlands	.....	.....	.....	.....
Other Countries	.....	.....	.....	.....
Totals	2,115,283	$522,513	17,029,003	$3,955,510
Rubber recovered	174,073	12,826	1,374,275	127,778
Rubber powdered and rubber or gutta percha scrap	216,918	7,811	2,449,286	83,440
Balata	678	532	2,735	2,195
Rubber Substitutes	153,310	39,670	493,514	136,392
Totals	2,660,262	$583,352	21,348,813	$4,305,315
PARTLY MANUFACTURED				
Hard Rubber sheets and rods	7,003	5,046	99,731	47,775
Hard rubber tubes	.....	2,482	.....	8,147
Rubber thread not covered	9,728	10,388	45,831	48,709
Totals	16,731	$17,916	145,562	$104,631
MANUFACTURED				
Belting	.....	38,405	.....	103,563
Hose	.....	12,524	.....	72,585
Packing	.....	3,281	.....	25,264
Boots and shoes....*pairs*	21,376	18,177	94,591	92,803
Clothing, including waterproofed	.....	10,806	.....	100,903
Gloves	.....	1,236	.....	9,183
Hot water bottles	.....	2,071	.....	4,656
Tires, solid....*number*	49	2,193	4,295	49,710
Tires, pneumatic..*number*	2,261	32,462	33,538	396,532
Inner tubes..*number*	690	2,165	19,524	47,374
Elastic, round or flat	.....	21,201	.....	146,035
Mats and matting	.....	1,104	.....	11,436
Cement	.....	2,862	.....	27,634
Other rubber manufactures	.....	100,302	.....	922,631
Totals	.....	$248,789	.....	$2,010,309
Totals, rubber imports	.....	$850,057	.....	$6,420,255

Exports of Domestic and Foreign Rubber Goods

UNMANUFACTURED	October, 1924 Produce of Canada Value	October, 1924 Re-exports of Foreign Goods Value	Seven months Ended October, 1924 April-October Produce of Canada Value	Seven months Ended October, 1924 April-October Re-exports of Foreign Goods Value
Crude and waste rubber	$8,872	.....	$43,578	.....
Totals	$8,872	.....	$43,578	.....
MANUFACTURED				
Belting	$43,087	.....	$242,674	.....
Canvas shoes with rubber soles	169,754	.....	1,090,801	.....
Boots and shoes	96,967	.....	446,036	.....
Clothing, including waterproofed	1,879	.....	18,204	.....
Hose	14,926	.....	86,612	.....
Tires, casings	390,833	.....	3,071,730	.....
Inner tubes	75,999	.....	503,938	.....
Pneumatic	.....	.....	.....	.....
Solid	28,897	.....	110,916	.....
Vehicle	.....	.....	.....	.....
Other rubber manufactures	28,869	$1,733	184,801	$73,397
Totals	$851,211	$1,733	$5,755,712	$73,397
Totals, rubber exports	$860,083	$1,733	$5,799,290	$73,397

UNITED STATES EXPORTS OF SOLID TIRES

It is most interesting to note that notwithstanding the comparative decline since the beginning of last year in American exports of solid tires, the figures are decidedly favorable when corresponding records for 1922 are estimated. These show that during the first ten months of 1924 the exports of solid tires for automobiles and motor trucks reached a value of $2,320,471 as compared with $1,518,932, the total for such exports during the entire year 1922. The largest monthly shipments abroad last year occurred in January, at $325,487; and March, $285,975.

United States Crude and Waste Rubber Imports for 1924 (By Months)

	Plantations	Parás	Africans	Centrals	Guayule	Manicoba and Matto Grosso	Total 1924	Total 1923	Balata	Miscellaneous	Waste
January ..... *tons*	20,611	731	181	88	.....	.....	21,611	31,197	23	249	95
February	29,977	1,501	192	93	.....	.....	31,763	24,220	47	799	53
March	16,009	980	663	33	67	.....	17,752	33,916	86	98	184
April	41,438	686	139	9	164	.....	42,436	31,588	55	1,371	114
May	22,466	1,176	70	17	185	.....	23,914	36,184½	55	139	104
June	17,810	737	46	115	132	.....	18,840	32,934	15	796	10
July	16,890	1,199	170	43	167	.....	18,469	18,609	26	1,335	50
August	18,397	1,014	567	6	92	.....	20,076	18,674	17	248	...
September	28,362	123	263	85	167	.....	29,000	11,611	15	557	74
October	34,073	2,172	613	157	142	.....	37,157	19,662	93	823	48
November	26,427	1,226	597	237	167	6	28,660	13,392	167	230	74
December	22,595	1,334	268	121	62	.....	24,380	27,871	66	424	89
Totals, 12 months, 1924..*tons*	295,055	12,879	3,769	1,004	1,345	6	314,058	.....	665	7,069	895
Totals, 12 months, 1923..*tons*	282,491	11,925	3,503	643	1,224	72½	.....	299,858½	869	7,025	3,754

Compiled from Rubber Association statistics.

United States by Countries During November, 1924—*(Continued)*

Pneumatic Casings			Solid Tires		Pneumatic Tubes			Tire Repair Materials	Hard Rubber Goods			Rubber Water Bottles and Fountain Syringes	Other Druggists' Rubber Sundries	Bathing Caps	Rubber Toys, Balls and Balloons
Automobile			Automobile and Motor Truck		Automobile				Battery Jars and Accessories	Other Electrical Supplies					
Number	Value	Others Value	Value	Others Value	Number	Value	Others Value	Value	Value	Value	Others Value	Value	Value	Value	Value
5,942	$86,652	$1,956	$22,954	$384	3,577	$7,615	$302	$1,681	$152	$117	$178	$340	$1,871	$81	$1,603
.....	.....	.....	.....	.....	27	31	.....	.....	.....	.....	63	.....	.....	.....	.....
24	217	11	280	16	23	54	.....	.....	.....	.....	.....	.....	.....	.....	.....
2,795	38,338	456	16,262	.....	1,267	3,177	79	1,391	.....	.....	.....	.....	1,388	80	526
39	447	20	.....	.....	22	47	.....	.....	.....	.....	150	.....	.....	.....	.....
8,800	$125,654	$2,443	$39,496	$400	4,916	$10,924	$381	$3,072	$152	$117	$391	$340	$3,259	$161	$2,129
156	$2,288	.....	.....	.....	248	$442	.....	$417	.....	.....	.....	.....	.....	.....	.....
796	10,891	$48	$1,244	.....	1,816	4,051	.....	2,445	.....	.....	.....	$18	$300	$445	$2,809
347	14,941	.....	.....	.....	94	259	.....	.....	.....	.....	.....	.....	.....	.....	24
586	7,511	.....	1,602	.....	291	511	.....	58	.....	.....	.....	.....	.....	.....	.....
491	5,888	.....	.....	.....	640	1,019	$10	1,311	.....	.....	.....	.....	.....	.....	.....
36	318	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
263	2,408	.....	.....	.....	526	725	.....	.....	.....	.....	.....	.....	.....	.....	.....
2,675	$44,245	$48	$2,846	.....	3,615	$7,007	$10	$4,231	.....	.....	.....	$18	$345	$445	$2,833
109,935	$1,224,821	$10,685	$183,069	$16,947	93,278	$155,469	$2,410	$41,636	$8,116	$3,322	$77,130	$15,647	$63,599	$4,495	$90,867

Official India Rubber Statistics for the United States

Imports of Crude and Manufactured Rubber

	November, 1924		Eleven Months Ended November, 1924	
	Pounds	Value	Pounds	Value
UNMANUFACTURED—*free*				
Crude rubber	75,467,655	$19,073,473	677,084,875	$158,351,659
Balata	158,450	80,942	952,396	521,770
Jelutong or Pontianak	414,542	37,171	13,263,906	1,192,619
Gutta percha	123,295	15,101	2,841,277	422,134
Guayule	106,000	18,497	2,630,183	465,243
Rubber scrap	1,805,860	44,520	9,926,555	362,219
Totals	78,055,802	$19,269,704	706,699,192	$161,315,644
Chicle—*dutiable*	634,135	$319,171	6,407,031	$3,259,051
MANUFACTURED—*dutiable*				
Rubber belting	52,069	$38,000	539,785	$370,455
Other rubber manufactures of substitute for rubber	.....	84,512	.....	1,933,464
Totals	52,069	$122,512	539,785	$2,303,919

Exports of Foreign Merchandise

UNMANUFACTURED				
Crude rubber	2,811,977	$957,502	21,024,316	$5,339,083
Balata	78,614	53,493	436,680	265,417
Jelutong or Pontianak	.....	.....	.....	.....
Gutta percha and rubber substitutes and scrap	.....	.....	53,072	2,079
Totals	2,890,591	$1,010,995	21,514,068	$5,606,579
Chicle	175	126	129,683	48,305
MANUFACTURED				
Gutta percha and India rubber	50,717	$16,439	121,133	$47,984
Totals	50,717	$16,439	121,133	$47,984

Exports of Domestic Merchandise

MANUFACTURED				
India rubber				
Reclaimed	565,193	$48,609	4,894,997	$462,946
Scrap and old	1,845,614	72,280	18,422,824	706,604
Footwear				
Boots—*pairs*	93,142	190,775	577,357	1,390,437
Shoes—*pairs*	139,991	97,558	1,594,596	1,311,012
Canvas shoes with rubber soles—*pairs*	385,947	253,443	3,455,335	2,628,285
Druggists' rubber sundries				
Water bottles and fountain syringes—*number*	21,311	15,647	235,172	180,379
Other druggists' rubber sundries	49,703	63,599	639,794	769,238
Bathing caps—*dozen*	2,430	4,495	141,980	267,371
Hard rubber goods				
Battery jars and accessories	15,105	8,116	353,686	106,243
Other electrical supplies	5,274	3,322	119,780	86,262
Other hard rubber goods	58,420	77,130	427,463	525,251
Tires				
Pneumatic casings				
For automobiles—*number*	109,935	1,224,821	1,151,973	13,899,452
Others—*number*	2,754	10,685	44,909	178,019
Pneumatic tubes				
For automobiles ..... *number*	93,278	155,469	1,032,421	1,884,583
Others—*number*	2,508	2,410	43,892	38,831
Solid tires				
For automobiles and motor trucks—*number*	7,245	183,069	96,373	2,503,540
Others—*number*	59,984	16,947	1,100,411	276,600
Tire accessories	101,130	41,636	1,225,808	485,163
Belting	246,725	142,187	3,338,569	1,959,118
Hose	332,641	122,175	4,173,340	1,628,073
Packing	157,120	74,857	1,770,845	781,983
Soles and heels	173,235	61,972	2,272,101	748,009
Thread	113,233	139,693	1,087,179	1,197,378
Other rubber manufactures	355,593	234,245	3,969,556	2,364,764
Totals	.....	$3,245,140	.....	$36,379,541

United States Rubber Imports by Customs Districts

CUSTOMS DISTRICTS	November, 1924		Eleven Months Ended November, 1924	
	Pounds	Value	Pounds	Value
Vermont	97,943	$12,733	100,793	$13,320
Massachusetts	2,349,987	578,399	17,589,083	4,008,844
New York	71,151,755	18,021,048	628,334,698	147,202,737
Philadelphia	168,000	78,400	4,024,183	889,027
Maryland	112,000	24,993	9,849,784	1,999,262
Los Angeles	1,262,712	285,124	10,604,596	2,367,576
San Francisco	79,610	20,626	6,161,919	1,463,983
Oregon	123,200	23,839	788,140	143,739
Washington	11,200	2,285	11,200	2,285
Colorado	111,248	26,026	830,190	182,542
Buffalo	.....	.....	33,227	5,937
Chicago	.....	.....	80,608	18,861
San Antonio	.....	.....	177,783	31,734
Hawaii	.....	.....	70	21
Totals	75,467,655	$19,073,473	678,586,274	$158,329,868

Landings, Deliveries and Stocks in London and Liverpool as Returned by the Warehouses and Wharves During November

	Landed for Nov. Tons	Delivered for Nov. Tons	Stocks, November 30		
			1924 Tons	1923 Tons	1922 Tons
LONDON:					
Plantation	4,325	8,213	33,463	59,724	68,423
Other grades	....	10	94	81	125
LIVERPOOL:					
Plantation	†201	†443	†2,881	†6,048	†7,397
Pará and Peruvian	78	137	81	232	432
Other grades	....	39	111	212	380
Total tons, London and Liverpool	4,604	8,842	36,630	66,297	76,757

† Official returns from six recognized public warehouses.

Crude Rubber Arrivals at New York as Reported by Importers

Parás and Caucho

	Fine Cases	Medium Cases	Coarse Cases	Caucho Cases	Cametá Cases
DECEMBER 24. By "Bruyere," Brazil.					
H. A. Astlett & Co.	62	....	79	11	....
H. A. Astlett & Co.	‡146	....	‡73	‡73	....
Paul Bertuch & Co.	†169	*151	....	*51	....
Paul Bertuch & Co.	**33	....	....	22	....
General Rubber Co.	624	30	248	32	¹36
L. Littlejohn & Co., Inc.	1,664	39	130	128	....
Meyer & Brown, Inc.	321	....	....	102	....
Poel & Kelly, Inc.	128	23	295	175	....
DECEMBER 30. By "Caronia," London.					
General Rubber Co.	....	....	....	240	....

	Fine Cases	Medium Cases	Coarse Cases	Caucho Cases	Cametá Cases
JANUARY 5. By "Alban," Brazil.					
H. A. Astlett & Co.	52	8	10	1	....
H. A. Astlett & Co.	‡292	....	‡219	....	....
Paul Bertuch & Co.	10	....	....	....	....
General Rubber Co.	640	21	37	²338	....
L. Littlejohn & Co., Inc.	179	....	....	200	....
Poel & Kelly, Inc.	330	26	147	102	....
Ultramares Corp.	††4	....	3	10	....

‡Washed and dried in Brazil.
†Pelles. **Crates. *Bales. ¹Includes 11 cases of mixed grades.
²Includes 1 case of mixed grades. ††Weak.

Plantations

	Cases
JANUARY 18. "American Banker," London.	
General Rubber Co.	3,137
JANUARY 18. By "Teucer," Far East.	
H. A. Astlett & Co.	1,173
H. A. Astlett & Co.	*276
Baird Rubber & Trading Co., Inc.	660
Baird Rubber & Trading Co., Inc.	*50
General Rubber Co.	120
Hood Rubber Co.	*583
L. Littlejohn & Co., Inc.	8,205
H. Muehlstein & Co., Inc.	2,480
H. Muehlstein & Co., Inc.	*950
Poel & Kelly, Inc.	4,969
Vernon Metal & Produce Co., Inc.	404
Chas. T. Wilson Co., Inc.	1,305
JANUARY 18. By "Vardulia," London.	
General Rubber Co.	2,203
L. Littlejohn & Co., Inc.	63
Poel & Kelly, Inc.	2,720
Vernon Metal & Produce Co., Inc.	323
JANUARY 18. By "Vellaria," Far East.	
Hood Rubber Co.	*53
DECEMBER 20. By "Calcutta Maru," Far East.	
Fisk Rubber Co.	280
H. Muehlstein & Co., Inc.	739
H. Muehlstein & Co., Inc.	*685
DECEMBER 20. By "Bowes Castle," Far East.	
H. A. Astlett & Co.	1,018
Baird Rubber & Trading Co., Inc.	472
Hood Rubber Co.	66
Hood Rubber Co.	*714
L. Littlejohn & Co., Inc.	7,265
Meyer & Brown, Inc.	2,738
H. Muehlstein & Co., Inc.	1,050
Poel & Kelly, Inc.	1,167
Chas. T. Wilson Co., Inc.	1,709
DECEMBER 21. By "Boschdyck," Rotterdam.	
H. Muehlstein & Co., Inc.	100
DECEMBER 22. By "Kandahar," Far East.	
General Rubber Co.	500
L. Littlejohn & Co., Inc.	1,795
Poel & Kelly, Inc.	48
Chas. T. Wilson Co., Inc.	63
DECEMBER 23. By "Half Moon," Far East.	
H. A. Astlett & Co.	306
H. A. Astlett & Co.	*25
Fisk Rubber Co.	50
General Rubber Co.	2,455
Hood Rubber Co.	*133
J. T. Johnstone & Co., Inc.	197
L. Littlejohn & Co., Inc.	873
Meyer & Brown, Inc.	233
H. Muehlstein & Co., Inc.	78
Poel & Kelly, Inc.	146
Chas. T. Wilson Co., Inc.	596
DECEMBER 24. By "Minnetonka," Europe.	
L. Littlejohn & Co., Inc.	11
DECEMBER 25. By "American Farmer," Europe.	
H. A. Astlett & Co.	311
L. Littlejohn & Co., Inc.	50
Meyer & Brown, Inc.	231
Chas. T. Wilson Co., Inc.	51
DECEMBER 25. By "Mississippi," London.	
Hood Rubber Co.	*154
L. Littlejohn & Co., Inc.	15
Meyer & Brown, Inc.	55
Chas. T. Wilson Co., Inc.	264
DECEMBER 26. By "Mahanada," Far East.	
Hood Rubber Co.	**84
L. Littlejohn & Co., Inc.	621
H. Muehlstein Co., Inc.	150
Chas. T. Wilson Co., Inc.	240
DECEMBER 26. By Venice Maru," Far East.	
H. A. Astlett & Co.	928
H. A. Astlett & Co.	*40

* Arrived at Boston.

	Cases
Baird Rubber & Trading Co., Inc.	354
Fisk Rubber Co.	847
General Rubber Co.	5,055
Hood Rubber Co.	200
J. T. Johnstone & Co., Inc.	504
L. Littlejohn & Co., Inc.	5,677
Meyer & Brown, Inc.	1,713
H. Muehlstein & Co., Inc.	1,560
Poel & Kelly, Inc.	734
Vernon Metal & Produce Co., Inc.	80
Chas T. Wilson Co., Inc.	254
DECEMBER 28. By "Scythian," Antwerp.	
H. Muehlstein & Co., Inc.	*210
DECEMBER 29. By "Halcric," Far East.	
Fisk Rubber Co.	560
General Rubber Co.	1,203
J. T. Johnstone & Co., Inc.	22
L. Littlejohn & Co., Inc.	522
JANUARY 2. By "Esther Dollar," Far East.	
H. A. Astlett & Co.	118
J. T. Johnstone & Co., Inc.	124
L. Littlejohn & Co., Inc.	225
Chas. T. Wilson Co., Inc.	7
JANUARY 2. By "Glen Bank," Far East.	
General Rubber Co.	711
Hood Rubber Co.	*84
Chas. T. Wilson Co., Inc.	193
JANUARY 3. By "South Western Miller," Far East.	
H. A. Astlett & Co.	3,639
Baird Rubber & Trading Co., Inc.	1,038
Paul Bertuch & Co.	109
Fisk Rubber Co.	419
General Rubber Co.	908
J. T. Johnstone & Co., Inc.	399
L. Littlejohn & Co., Inc.	7,775
Meyer & Brown, Inc.	2,314
H. Muehlstein & Co., Inc.	895
Poel & Kelly, Inc.	1,953
Poel & Kelly, Inc.	*160
Vernon Metal & Produce Co., Inc.	291
Chas. T. Wilson Co., Inc.	793
JANUARY 5. By "Medon," Far East.	
H. A. Astlett & Co.	214
Fisk Rubber Co.	136
General Rubber Co.	1,177
Hood Rubber Co.	*68
L. Littlejohn & Co., Inc.	2,728
Meyer & Brown, Inc.	894
H. Muehlstein & Co., Inc.	*102
Poel & Kelly, Inc.	1,292
Vernon Metal & Produce Co., Inc.	47
Chas. T. Wilson Co., Inc.	223
JANUARY 5. By "President Adams," Far East.	
H. A. Astlett & Co.	101
Fisk Rubber Co.	280
General Rubber Co.	112
L. Littlejohn & Co., Inc.	1,365
Poel & Kelly, Inc.	775
Chas. T. Wilson Co., Inc.	425
JANUARY 5. By "Sandon Hall," Far East.	
Hood Rubber Co.	*126
L. Littlejohn & Co., Inc.	286
Chas. T. Wilson Co., Inc.	222
JANUARY 5. By "Virgilia," London.	
General Rubber Co.	3,028
Poel & Kelly, Inc.	560
JANUARY 7. By "Eurylochus," Far East.	
H. A. Astlett & Co.	1,864
H. A. Astlett & Co.	*1,031
Baird Rubber & Trading Co., Inc.	2,107
Baird Rubber & Trading Co., Inc.	*300
Paul Bertuch & Co.	200
Fisk Rubber Co.	1,189
General Rubber Co.	3,298
Hood Rubber Co.	*166
J. T. Johnstone & Co., Inc.	710
L. Littlejohn & Co., Inc.	9,403
Meyer & Brown, Inc.	6,574
H. Muehlstein & Co., Inc.	1,529
H. Muehlstein & Co., Inc.	*80
Poel & Kelly, Inc.	5,545
Vernon Metal & Produce Co., Inc.	40
Chas. T. Wilson & Co.	539
JANUARY 7. By "London Commerce," London.	
Poel & Kelly, Inc.	1,110
JANUARY 8. By "Steel Navigator," Far East.	
H. A. Astlett & Co.	140
H. A. Astlett & Co.	*40
Baird Rubber & Trading Co., Inc.	1,108
Fisk Rubber Co.	68
General Rubber Co.	4,274
Hood Rubber Co.	*220
J. T. Johnstone & Co., Inc.	102
L. Littlejohn & Co., Inc.	2,392
Meyer & Brown, Inc.	1,132
H. Muehlstein & Co., Inc.	155
Poel & Kelly, Inc.	1,684
Chas. T. Wilson Co., Inc.	1,353
JANUARY 9. By "American Trader," Europe.	
L. Littlejohn & Co., Inc.	451
Poel & Kelly, Inc.	738
JANUARY 10. By "City of Bombay," Far East.	
H. A. Astlett & Co.	112
General Rubber Co.	1,574
L. Littlejohn & Co., Inc.	1,411
Chas. T. Wilson Co., Inc.	358
JANUARY 11. By "Menominee," London.	
Hood Rubber Co.	671
L. Littlejohn & Co., Inc.	3,781
H. Muehlstein & Co., Inc.	465
Poel & Kelly, Inc.	488
Vernon Metal & Produce Co., Inc.	156
JANUARY 12. By "Antonia," London.	
Poel & Kelly, Inc.	1,875
JANUARY 13. By "Minnewaska," Europe.	
Baird Rubber & Trading Co., Inc.	250
L. Littejohn & Co., Inc.	1,302
JANUARY 15. By "President Garfield," Far East.	
H. A. Astlett & Co.	640
H. A. Astlett & Co.	*50
Baird Rubber & Trading Co., Inc.	800
General Rubber Co.	431
L. Littlejohn & Co., Inc.	2,686
Meyer & Brown, Inc.	500
Vernon Metal & Produce Co., Inc.	150
JANUARY 16. By "Kosmo," Singapore.	
H. A. Astlett & Co.	1,444
H. A. Astlett & Co.	*120
JANUARY 17. By "Calchas," Far East.	
H. A. Astlett & Co.	1,220
H. A. Astlett & Co.	*472
Baird Rubber & Trading Co., Inc.	2,315
Baird Rubber & Trading Co., Inc.	*200
General Rubber Co.	788
I. T Johnstone & Co., Inv.	750
L. Littlejohn & Co., Inc.	7,211
Meyer & Brown, Inc.	1,182
Vernon Metal & Produce Co., Inc.	249
JANUARY 17. By "West Mahomet," Sourabaya.	
H. A. Astlett & Co.	572
H. A. Astlett & Co.	*83
Baird Rubber & Trading Co., Inc.	362

Africans

	Cases
DECEMBER 17. By "Aurania," Europe.	
L. Littlejohn & Co., Inc.	118
DECEMBER 19. By "Burgerdyk," Europe.	
L. Littlejohn & Co., Inc.	108
DECEMBER 24. By "Ohio," Europe.	
L. Littlejohn & Co., Inc.	936
DECEMBER 25. By "Port Sydney," Liverpool.	
General Rubber Co.	490
Poel & Kelly, Inc.	67
DECEMBER 30. By "Caronia," Europe.	
L. Littlejohn & Co., Inc.	121
JANUARY 16. By "Olin," Bordeaux.	
Baird Rubber & Trading Co., Inc.	39 casks

Balata

	Bales
DECEMBER 19. By "Surinam," French Guiana.	
Middleton & Co., Ltd.	28
DECEMBER 25. By "Tivives," Cartagena.	
Ultramares Corp.	5
DECEMBER 27. By "Haiti," Dutch Guiana.	
Middleton & Co., Ltd.	17
JANUARY 5. By "Alban," Manaos.	
Paul Bertuch & Co.	7

Centrals

	Bales
DECEMBER 18. By "Lake Flattery," Tumaco.	
Ultramares Corp.	44
JANUARY 5. By "Ulua," Corinto.	
Ultramares Corp.	4

Gutta Siak

	Cases
JANUARY 19. By "Teucer," Singapore.	
H. A. Astlett & Co.	82

Rubber Latex

	Pounds
DECEMBER 23. By "Half Moon," Far East.	
General Rubber Co.	185,975
JANUARY 8. By "Steel Navigator," Far East.	
General Rubber Co.	188,884
JANUARY 18. By "West Mahomet," Far East.	
General Rubber Co.	252,840

UNITED STATES IMPORTS OF RUBBER PRODUCTS

During the first nine months of 1924 the United States imported 182,578 automobile tires, value $1,082,827, of which 181,662, value $1,071,452, were imported from France. After July the imports of these casings, mostly 31 by 4.4 clincher balloons, practically ceased, and at present several American manufacturers are producing tires of the same size and type.

Golf balls rank next in value to tires among rubber products imported into the United States, 2,521,804 such balls, value $936,226, being imported from England, Scotland, and France during the first nine months of 1924. Of this quantity England supplied 92.1 per cent, Scotland 3.4 per cent, and France 5 per cent. It has been estimated that about 1,000,000 dozen golf balls were used in the United States in 1922, and that the annual increase in consumption is about 10 per cent, which would make the consumption 13,200,000 in 1923, and 14,500,000 in 1924. Imports of golf balls from Great Britain and France numbered 2,836,141, valued at $1,173,659 in 1923, and about 22 per cent of the American demand in that year was supplied with imported products.

During the nine months under consideration the United States also imported 425,769 pounds of "machinery belting, of cotton or other vegetable fiber, and rubber," value $293,153. England was the leading source of supply, sending 306,276 pounds, value $192,242; Scotland second, with 102,175 pounds, value $85,832; and Belgium third, with 14,848 pounds, value $11,769. These imports from England probably consisted largely of specially treated cotton beltings without rubber, while the shipments from Scotland to this country are believed to be principally rubber and balata beltings. Imports of hard rubber goods during the first nine months of 1924 are estimated at 258,559 pounds, value $319,969, Austria and Germany, the leading sources of supply, sending goods valued at $154,675 and $153,330 respectively. Imports of druggists' rubber sundries into the United States during the first quarter of 1924 amounted to 35,184 pounds, value $37,573; second quarter, 27,729 pounds, value $36,786; and third quarter, 15,939 pounds, value $23,404.—*Commerce Reports.*

IRISH FREE STATE RUBBER IMPORTS

The Irish Free State Government has this year commenced the publication of regular monthly import and export returns, thus affording for the first time an idea of the rubber purchasing capabilities of the country. The appended table shows the imports of such goods into the Free State during the seven months ended July last, the values being reckoned at $4.50 to the £ sterling.

FIRST SEVEN MONTHS, 1924

	Value in dollars
Motorcycle and car tire casings	$625,045
Cycle tire casings	198,990
Inner tubes all kinds	164,821
Solid tires	114,745
Heels and soles	61,218
Other rubber manufactures	231,867
Totals	$1,396,686

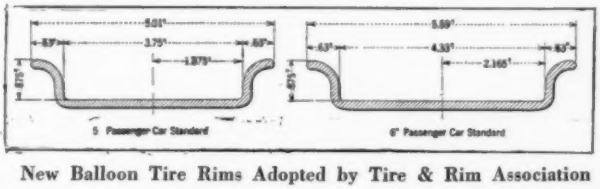
Although $1,359,621 of the total is credited to the United Kingdom and only $37,065 to foreign countries, it does not follow that the whole of the goods are of British manufacture, the official returns relating only to the ports of shipment. Being part of the United Kingdom, no returns are available as to the imports of rubber goods into Northern Ireland.

TIRE & RIM ASSOCIATION REPORT OF RIMS INSPECTED AND APPROVED DURING DECEMBER, 1924

Rim Size	Number	Per Cent
Clincher:		
24 x 3	401	0.0
26 x 3	8035	0.7
30 x 3	56744	4.7
30 x 3½	380135	31.3
31 x 4	61697	5.1
Straightside:		
25 x 3½	212	0.0
27 x 3½	10	0.0
28 x 3½	91865	7.6
29 x 3½	17095	1.4
30 x 3½	109517	9.0
32 x 3½	4714	0.4
28 x 4	72635	6.0
29 x 4	78409	6.5
30 x 4	29747	2.4
31 x 4	2470	0.2
32 x 4	12895	1.1
29 x 4½	14361	1.2
30 x 4½	92845	7.6
31 x 4½	11438	0.9
32 x 4½	57666	4.8
34 x 4½	6787	0.6
30 x 5	13720	1.1
31 x 5	23564	1.9
33 x 6	1608	0.1
Truck:		
30 x 5	51451	4.2
34 x 5	6381	0.5
32 x 6	4236	0.4
36 x 6	1898	0.2
34 x 7	492	0.0
38 x 7	725	0.0
40 x 8	35	0.0
Totals	1,213,788	100.0

NEW BALLOON RIM STANDARDS

In the accompanying illustration are given size sections of 5 and 6 inch nominal size rims of conventional type which are new sizes recently standardized by the Tire & Rim Association.



New Balloon Tire Rims Adopted by Tire & Rim Association

These new rims, designed especially for balloon tires on passenger cars, have the same actual width between flanges as the 5 and 6-inch rims for pneumatic truck tires, but the flanges are considerably lower and the overall width is slightly less.

RUBBER EXPORTS FROM FAR EAST

A chart system of representing the amounts of crude rubber exported from the Far East has been prepared by F. R. Henderson & Co., Inc., 250 West 57th street, New York, N. Y. According to these tabulations the total shipments for the year 1923 by Malaya, Java and East Coast of Sumatra, Ceylon and others reached a total of 375,256 tons, while the total for the first eight months of the year 1924 is 251,146 tons. The highest record for the year 1924 is that for January, at 35,018 tons as compared with the still larger figure for the month previous of 38,334 tons, the latter also representing the largest monthly total for the year 1923.

INDIA RUBBER WORLD
FOUNDED 1889
CAOUTCHOUC
GUTTA-PERCHA
Reg U.S. Pat. Off.
Reg. United Kingdom.

Vol. 71 FEBRUARY 1, 1925 No. 5

TABLE OF CONTENTS

	Pages
Editorials	
The Rubber Planting Situation	269-270
Increase in Exports Certain	270
Minor Editorials	270
The Installation of Rubber Flooring. By Elmer Swanson (Illustrated)	271-272
Continuous Production of Inner Tubes by Tubing Machine (Illustrated)	272-273
The Rubber Association of America, Inc.	
Twenty-fifth Annual Dinner (Illustrated)	274-277
Annual Meeting, Report of	277-278
Portraits of Officers and Directors	276
Report of Inventory of Pneumatic Casings, etc.	278
National Automobile Show Illustrated	279
Chemistry	
What the Rubber Chemists Are Doing. (Illustrated)	280-281
Chemical Patents	282
Interesting Letters from Our Readers	282
New Machinery and Appliances (Illustrated) Belt-Making Machine. Reduction Gearing. Rubber Buffing Rasp. Friction Clutch for Tire Building Machines. Duplex Vulcanizing Press. De Laval Flexible Coupling. Unique Core Chuck. Circular Inner Tube Wrapping Machine. "Watch Case" Tire Vulcanizer.	283-285
Machinery Patents (Illustrated) Bead Filler Machine. Apparatus for Making Pneumatic Tire Fabrics. Fabric Handling Machine. Grooving Machine. Tread Buffing Machine. Vulcanizing System. Tire Building Machine. Mixing Machine. Other Machinery Patents.	285-286
Process Patents	286
Editor's Book Table "Third Year Book of the Institution of the Rubber Industry, 1924." "South American Leaf Disease of Pará Rubber."	287
New Trade Publications	287
Recent Articles Relating to Rubber	287-288
Holiday Greetings, Calendars, Souvenirs, etc.	288
Inquiries and Trade Opportunities	288
New Goods and Specialties (Illustrated) Eyeshade with Elastic Band for Tennis. Par-Tee, a Device for Golf Practice. Permanent Rubber Brick Traffic Signs. "Locktite" Fabric Back Patch. Paynter Thief-Proof Cords. Rubber Darning Egg. Device for Conforming the Hair. Rubber Used in a Breath-Measuring Device. Another Gaiter Offering of the Season. Miniature Demountables Just Like Dad's. New Sizes Added to the Michelin Line. Pneumatic Chest Protector for Baseball. Loud Speaker Made Entirely of Hard Rubber. Rubber Patter for Massage. Step-In Skirt and Sanitary Apron Combined. Water Screen Revolving Nozzle for Fighting Fires. Rubber Non-Skid Chain Links. Rubberized Fabric Glove. All-Rubber Ford Radiator Connection.	289-291
Obituary Record Col. C. M. DuPuy (Portrait). Frederick Stern (Portrait). Charles Loewenthal (Portrait). Paul Bertuch (Portrait). George Louis Lavery. Fritz Achelis.	292-293
Judicial Decisions	293
American Rubber Trade—News and Personals	
Rubber Industry Outlook	294
Stock Quotations	294
Dividends	294
New Incorporations	294
East and South	294-296
Motor and Accessory Manufacturers' Association, Annual Meeting and Dinner	296
New Jersey	296
Rhode Island	297
Massachusetts	298
Ohio (Illustrated)	298-300
Midwest	300
Pacific Coast	301
Canada	302
Foreign Trade Information	302
Foreign Rubber News	
Europe	303-305
Planting	
Far East By Our Correspondent	306-307
Patents Relating to Rubber	308-310
United States. Canada. United Kingdom. New Zealand. Germany.	
Trade Marks	310-311
United States. Canada. United Kingdom. New Zealand.	
Designs	311
United States. Canada.	
The Cotton Outlook	322-323
Markets	
Crude Rubber, Annual Review Graph	312-314
New York Spot Rubber Prices 1919-1924 Graph	312
Highest and Lowest New York Spot Rubber Prices 1916-1924	313
Monthly Review Graph	316-317
Highest and Lowest New York Spot Rubber Prices	317
New York Average Spot Rubber Prices	316
Reclaimed Rubber	318
Rubber Scrap	318
Cotton and Other Fabrics, Annual Review Graph	314-315
Monthly Review Graph	321
Metal Market Review	323
Chemicals and Other Ingredients, Annual Review Graph	315
Monthly Review	319-320
Statistics	
Canada, Statistics for October, 1924	326
Malaya, British Rubber Exports	318
United Kingdom	
London and Liverpool Landings, Deliveries and Stocks	327
United States	
Exports of India Rubber Manufactures During November, 1924	324-327
Imports by Months, During 1924	326
Crude Rubber Arrivals at New York as Reported by Importers	328-329
Custom House Statistics	327
Statistics for November, 1924	327
Tire and Rim Association Report of Rims Inspected and Approved During December, 1924	329

025

ages
-293

293

294
294
294
294
-296

296
296
297
298
-300
300
301
302
302

-305

-307
-310

-311

311

-323

-314
312

313
-317

317
316
318
318
-315
321
323

315
-320

326
318

327

-327
326

-329
327
327

329